# CDP-CA8ES/CA9ES

# SERVICE MANUAL

*US Model*
*Canadian Model*
*CDP-CA8ES/CA9ES*
*AEP Model*
*E Model*
*CDP-CA8ES*

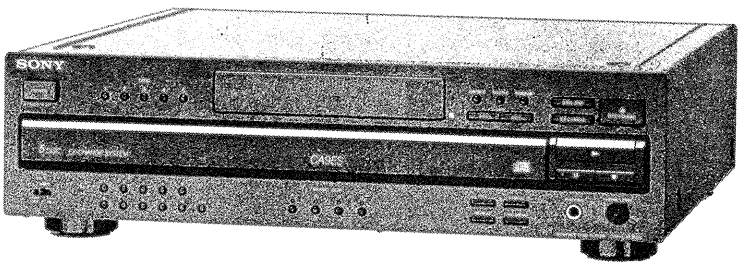


**Photo: CDP-CA9ES**

| | |
|---|---|
| Model Name Using Similar Mechanism | CDP-C545 |
| Base Unit Name | BU-5BD10B |
| Optical Pick-Up Block Type | KSS-240A |

## SPECIFICATIONS

### Compact disc player

| | |
|---|---|
| **Laser** | Semiconductor laser |
| **Wavelength** | 780 – 790 nm |
| **Frequency response** | 2 Hz to 20 kHz ± 0.3 dB |
| **Signal-to-noise ratio** | More than 117 dB |
| **Dynamic range** | More than 100 dB |
| **Harmonic distortion** | CDP-CA9ES: Less than 0.0023%<br>CDP-CA8ES: Less than 0.0025% |
| **Channel separation** | More than 110 dB |

### Output

| | Jack type | Maximum output level | Load impedance |
|---|---|---|---|
| **LINE OUT (FIXED)** | Phono jacks | 2 V (at 50 kilohms) | Over 10 kilohms |
| **LINE OUT (VARIABLE)** | Phono jacks | 2 V (at 50 kilohms) | Over 50 kilohms |
| **DIGITAL OUT (OPTICAL)** | Optical output connector | –18 dBm | Wave length: 660 nm |
| **PHONES** | Stereo phone jack | 15 mW | 32 ohms |

### General

| | |
|---|---|
| **Power requirements** | 120 V AC, 60 Hz |
| **Power consumption** | CDP-CA9ES: 17 W<br>CDP-CA8ES: 15 W |
| **Dimensions (approx.) (w/h/d)** | 430 × 125 × 400 mm (17 × 5 × 15 3/4 in.) incl. projecting parts |
| **Mass (approx.)** | CDP-CA9ES: 7.5 kg (16 lbs 9 oz)<br>CDP-CA8ES: 7.0 kg (15 lbs 7 oz) |

### Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

## COMPACT DISC PLAYER

SONY®

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| | Specifications | 1 |
| | Notes on Handling the Optical Pick-Up Block or Base Unit | 2 |
| | Notes on Laser Diode Emission Check | 2 |
| 1. | **GENERAL** | 3 |
| 2. | **DISASSEMBLY** | 4 |
| 3. | **MECHANICAL ADJUSTMENT** | 5 |
| 4. | **ELECTRICAL BLOCK CHECKING** | 5 |
| 5. | **DIAGRAMS** | |
| 5-1. | Block Diagram | 7 |
| 5-2. | Base Unit Section Printed Wiring Board and Schematic Diagram | 11 |
| 5-3. | Main Section Printed Wiring Board | 16 |
| 5-4. | Main Section Schematic Diagram | 19 |
| 5-5. | Display Control Section Printed Wiring Board and Schematic Diagram | 23 |
| 5-6. | IC Pin Function Description | 29 |
| 6. | **EXPLODED VIEWS** | 34 |
| 7. | **ELECTRICAL PARTS LIST** | 38 |


## NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

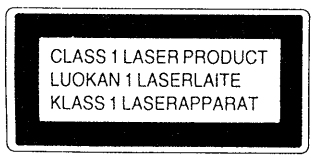
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

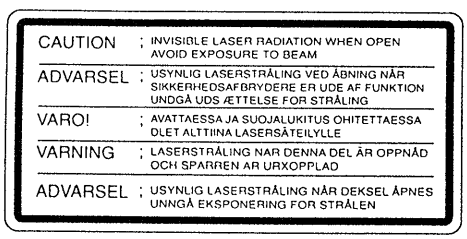
## NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.




This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDS ÆTTELSE FOR STRÅLING
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE
VARNING ; LASERSTRÅLING NAR DENNA DEL ÄR OPPNÅD OCH SPARREN AR URXOPPLAD
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN

This caution label is located inside the unit.

**CAUTION**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**SAFETY-RELATED COMPONENT WARNING!!**

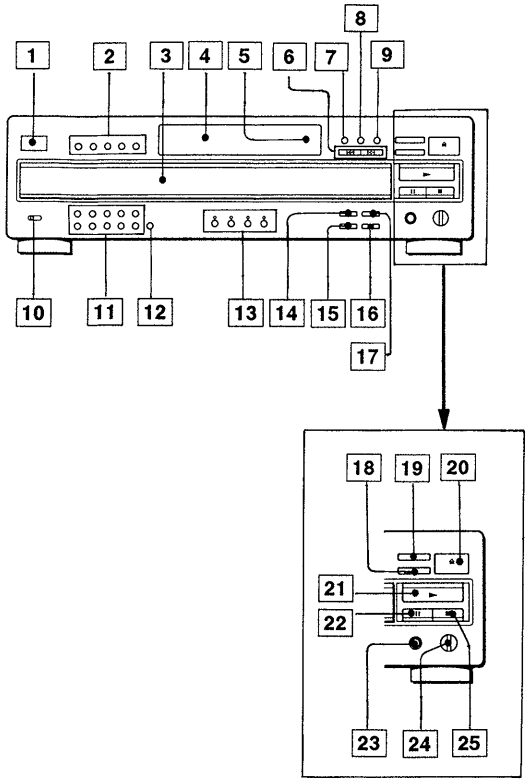
**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.**

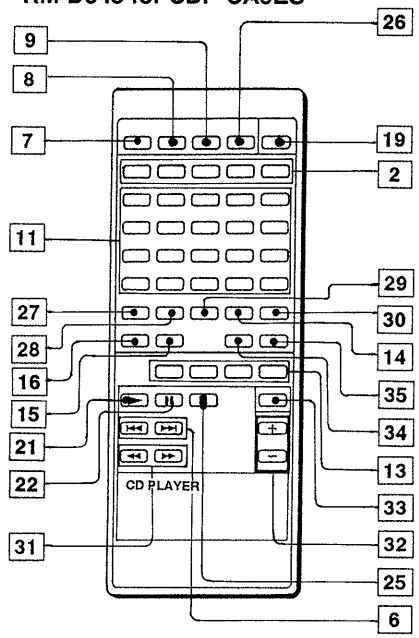
This section is extracted from instruction manual.

• Parts Identification

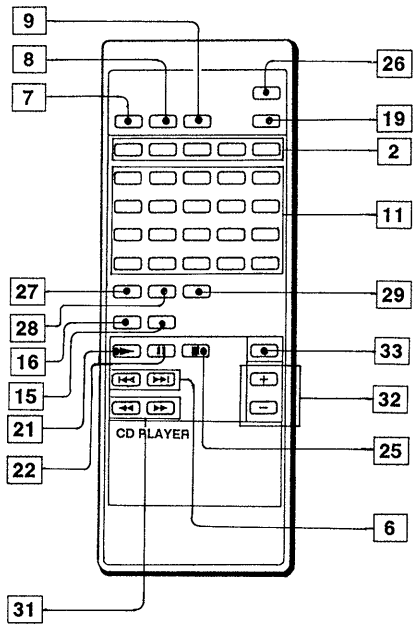



1 POWER switch
2 DISC 1 – 5 buttons
3 Disc tray
4 Display
5 Remote sensor
6 ⏮ / ⏭ (AMS) buttons
7 CONTINUE button
8 SHUFFLE button
9 PROGRAM button
10 TIMER switch (CDP-CA9ES)
11 Number buttons
12 >10 (over 10) button
13 MUSIC CLIP A – D buttons (CDP-CA9ES)
14 FILE button
15 REPEAT button
16 TIME/MEMO button (CDP-CA8ES)
TIME button (CDP-CA9ES)
17 ERASE button
18 EX-CHANGE button
19 DISC SKIP button
20 ⏏ OPEN/CLOSE button
21 ▶ (play) button and Indicator
22 ⏸ (pause) button and indicator
23 PHONES jack
24 PHONE LEVEL control
25 ■ (stop) button
26 MUSIC SCAN button
27 > 20 (over 20) button
28 CHECK button
29 CLEAR button
30 MEMO INPUT button
31 ◀◀ / ▶▶ (manual search) buttons
32 LINE OUT LEVEL + / – buttons
33 FADER button
34 ERASE button
35 LEVEL FILE button

RM-D645 for CDP-CA9ES




RM-D515 for CDP-CA8ES

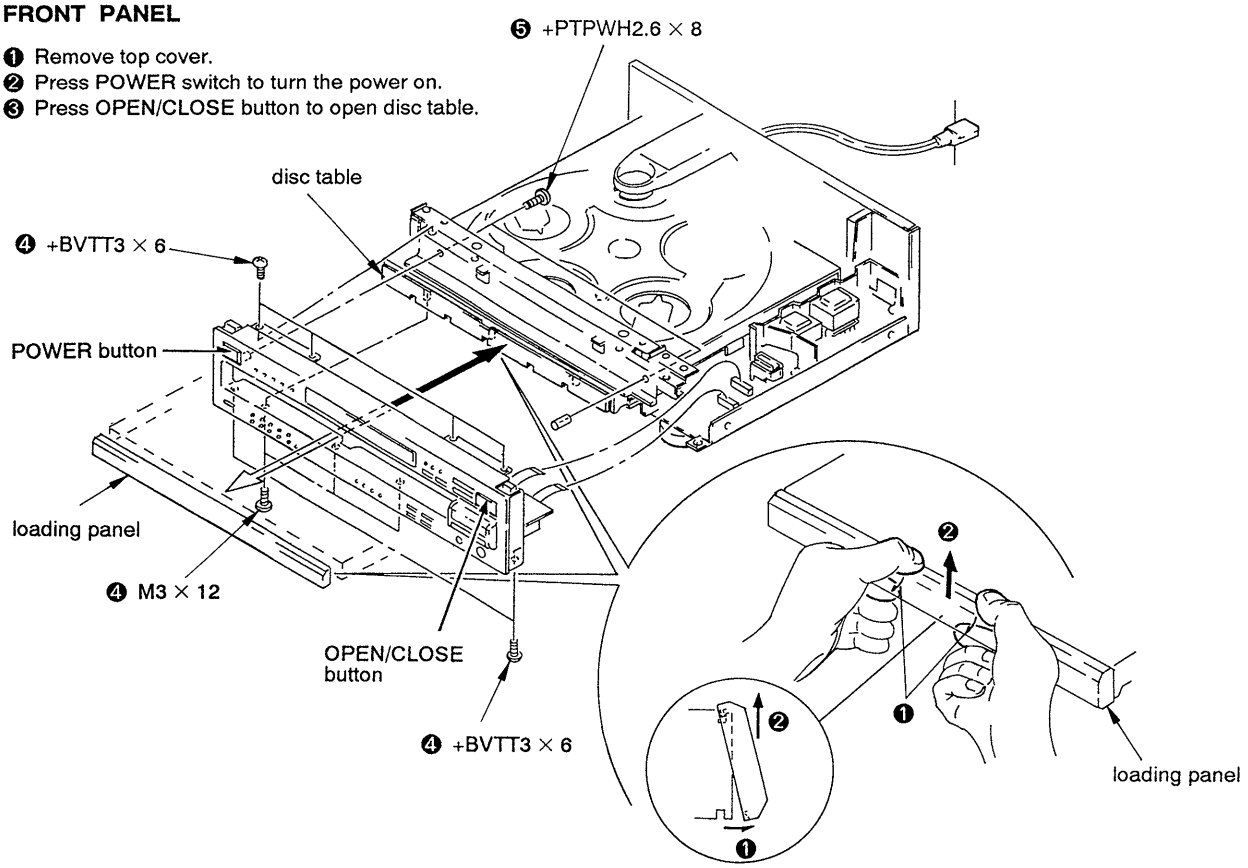


# SECTION 2
# DISASSEMBLY

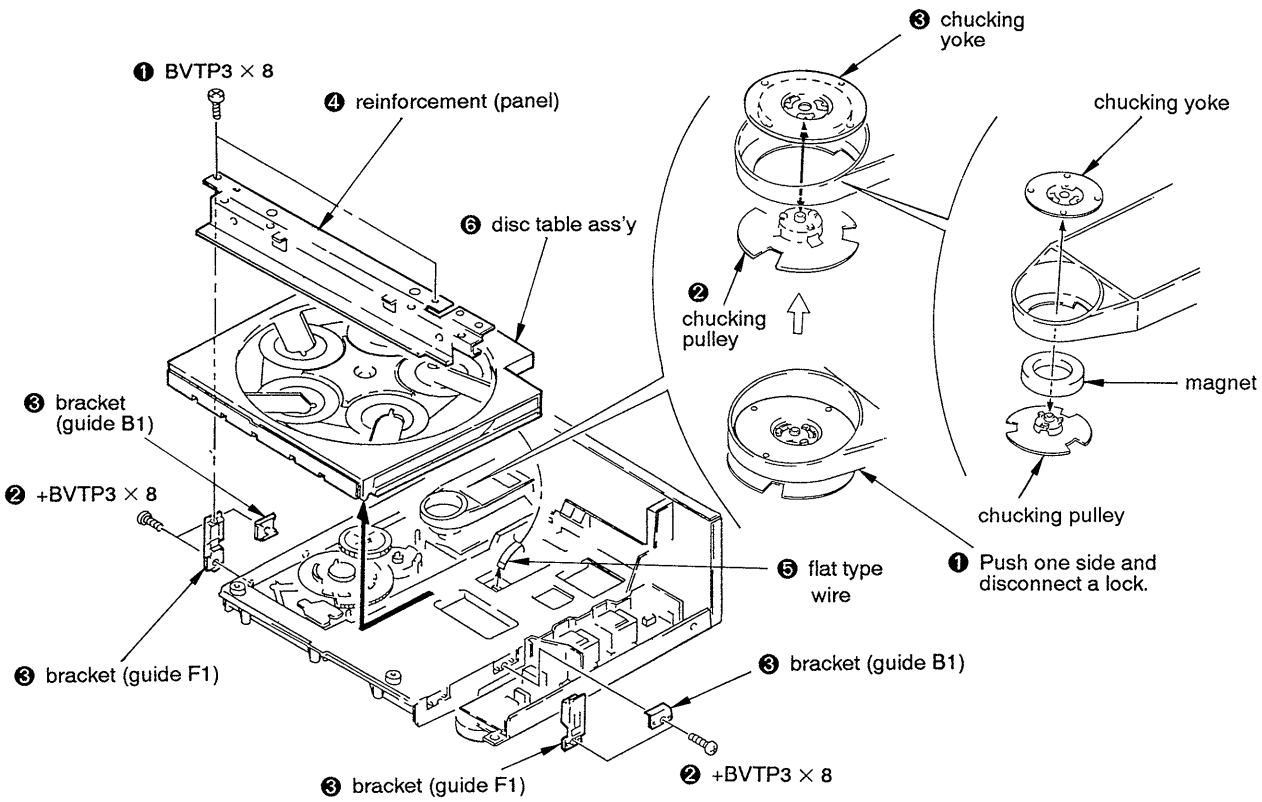
**Note:** Follow the disassembly procedure in the numerical order given.

## FRONT PANEL

❶ Remove top cover.
❷ Press POWER switch to turn the power on.
❸ Press OPEN/CLOSE button to open disc table.



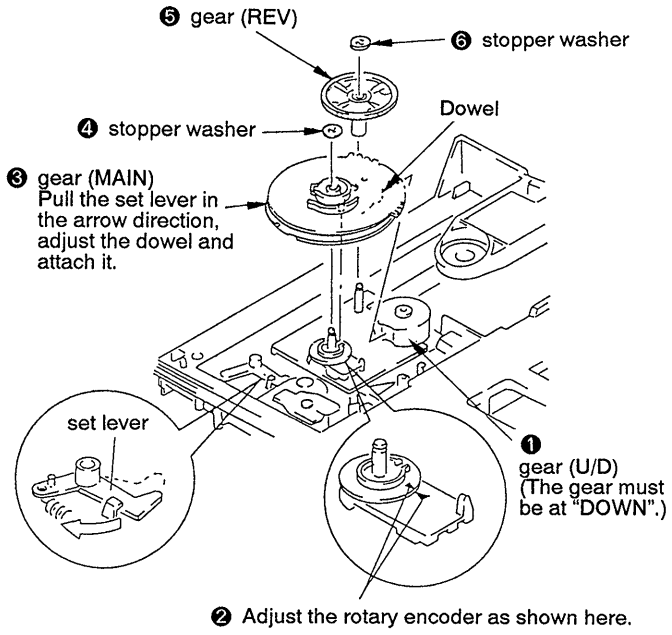

## DISC TABLE ASS'Y



# SECTION 3
# MECHANICAL ADJUSTMENT

### Positioning the Encoder when Attaching the Gear (Main)

The position of the rotary encoder must be adjusted when attaching the gear (MAIN). If its position is not adjusted properly, problem may occur afterwards during operation.

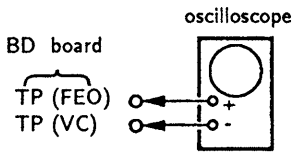

❺ gear (REV)
❻ stopper washer
Dowel
❹ stopper washer
❸ gear (MAIN)
Pull the set lever in the arrow direction, adjust the dowel and attach it.
set lever
❶ gear (U/D)
(The gear must be at "DOWN".)
❷ Adjust the rotary encoder as shown here.

# SECTION 4
# ELECTRICAL BLOCK CHECKING

**Note :**

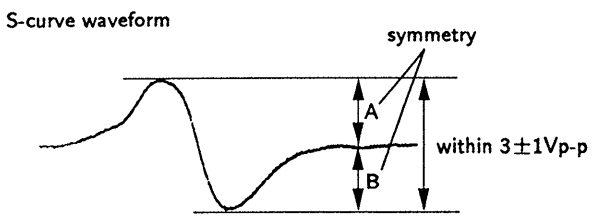
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

### S-Curve Check




**Procedure :**

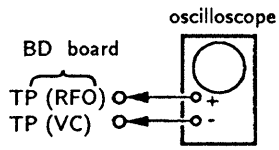
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.




6. After check, remove the lead wire connected in step 2.

**Note :** • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

### RF Level Check



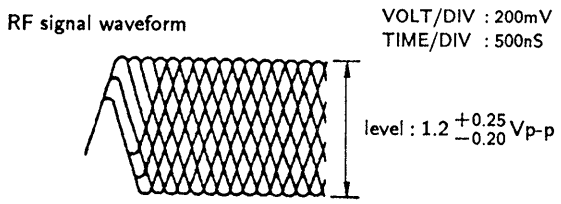

**Procedure :**

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turned Power switch on.

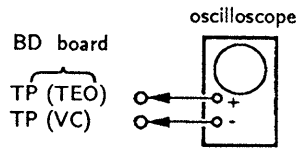
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

**Note :**

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

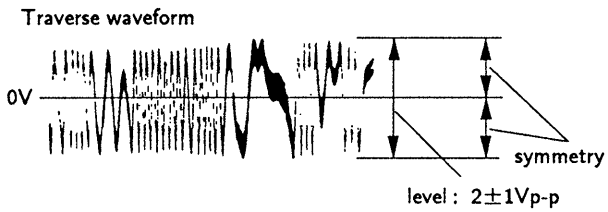



## E-F Balance Check




**Procedure :**

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

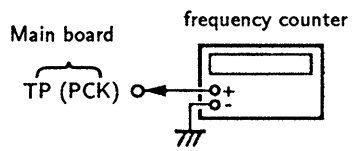



6. Remove the lead wire connected in step 1.

## RF PLL Free-run Frequency Check

**Procedure :**

1. Connect frequency counter to test point (PCK) with lead wire.

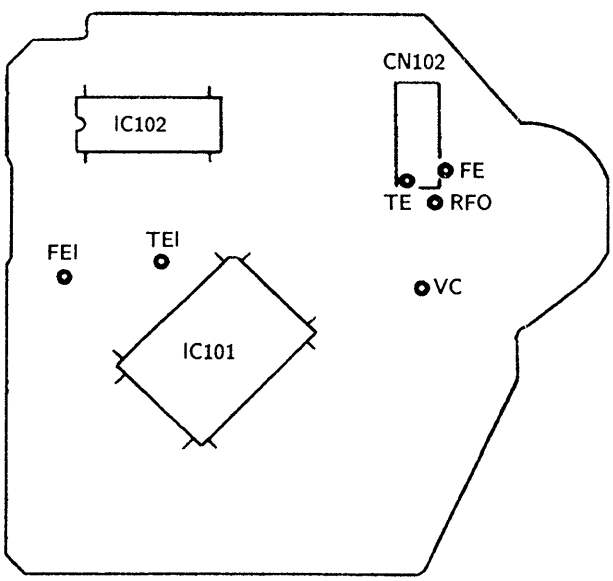


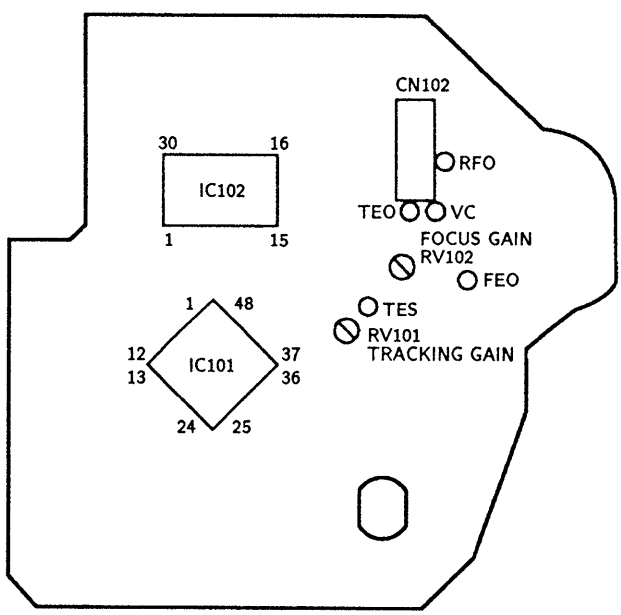

2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

## Adjustment Location :

【BD BOARD】

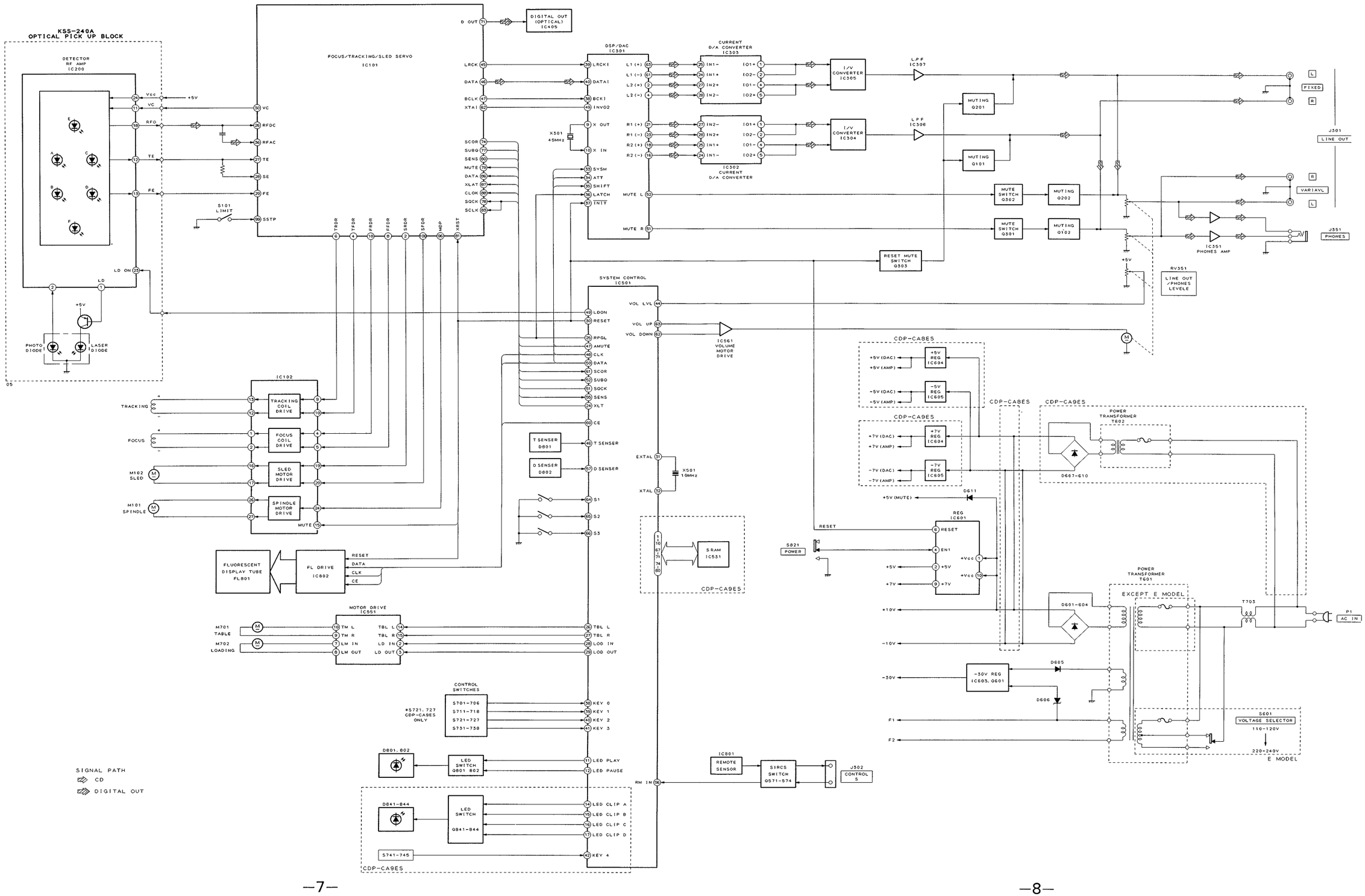
- Conductor side -



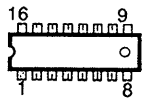
# SECTION 5
# DIAGRAMS

## 5-1. BLOCK DIAGRAM

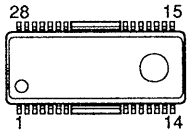


## • Semiconductor Lead Layouts

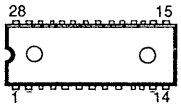
**BA6193**




**BA6297AFP**

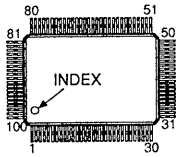



**CXA8042S**

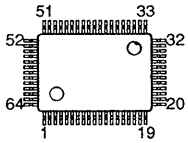



TOP VIEW

**CXD2515Q**

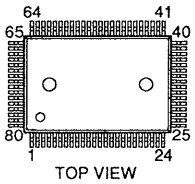



**CXD8505Q**



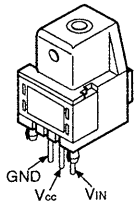

TOP VIEW

**CXP84124-026Q**

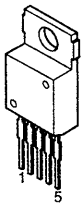



TOP VIEW

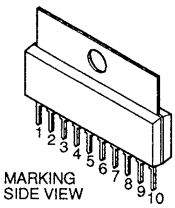
**GP1F32T**



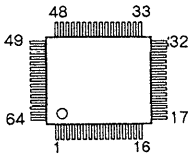

**LA6500-FA**



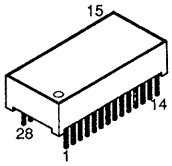

**LA5616**



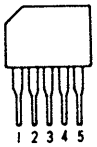

**LC75721E**



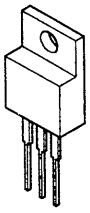

**LH5160TF**



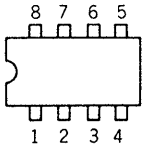

**M5293L**




**M5F7807**
**M5F7807L**

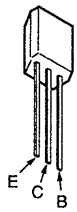


**NE5532P**

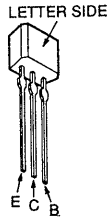



(Top view)

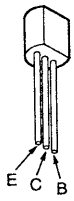
**DTA114ES**
**DTA144ES**
**DTC144ES**



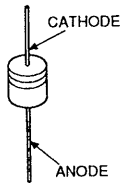

**2SA1175-HFE**



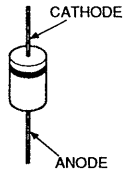

**2SC2878-AB**



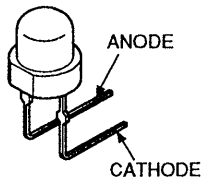

**RD5.1ES-B2**
**RD5.6ES-B**
**RD6.2ES-B1**
**RD9.1ESB2**
**11ES2**
**11EQS04**



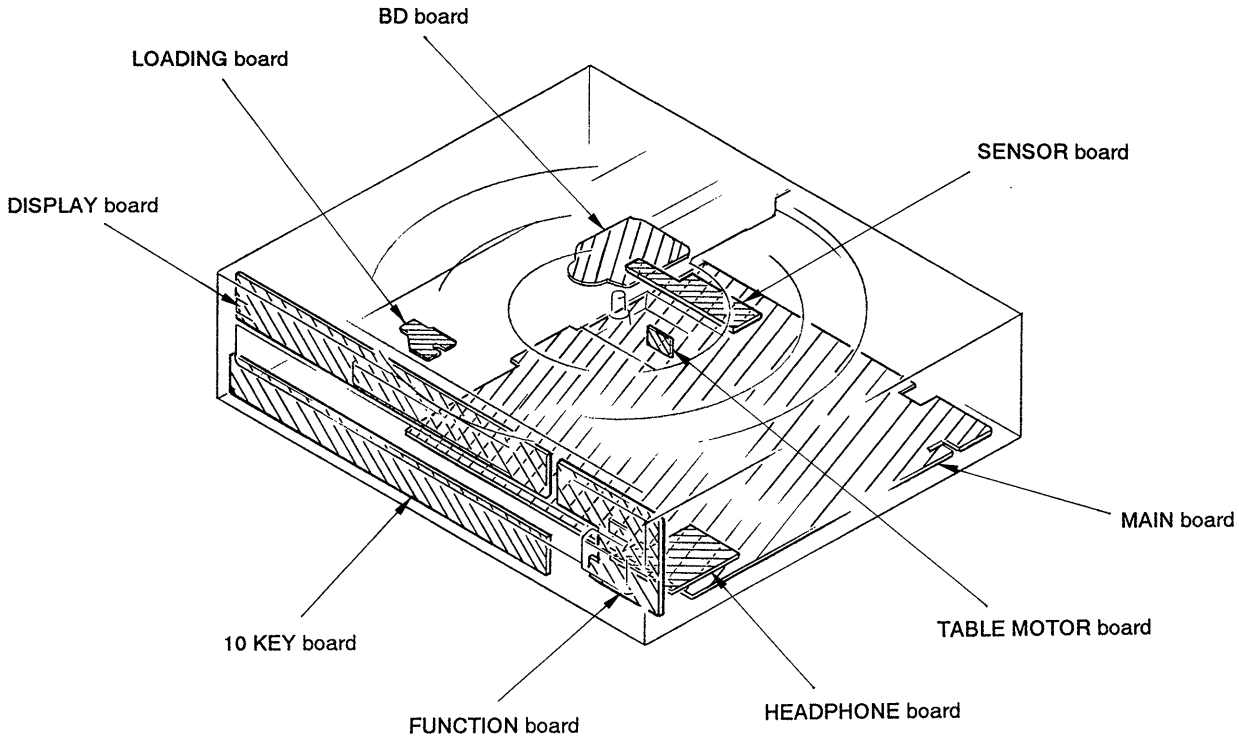

**1N4148M**




**SEL2510C-D**



- **Circuit Boards Location**

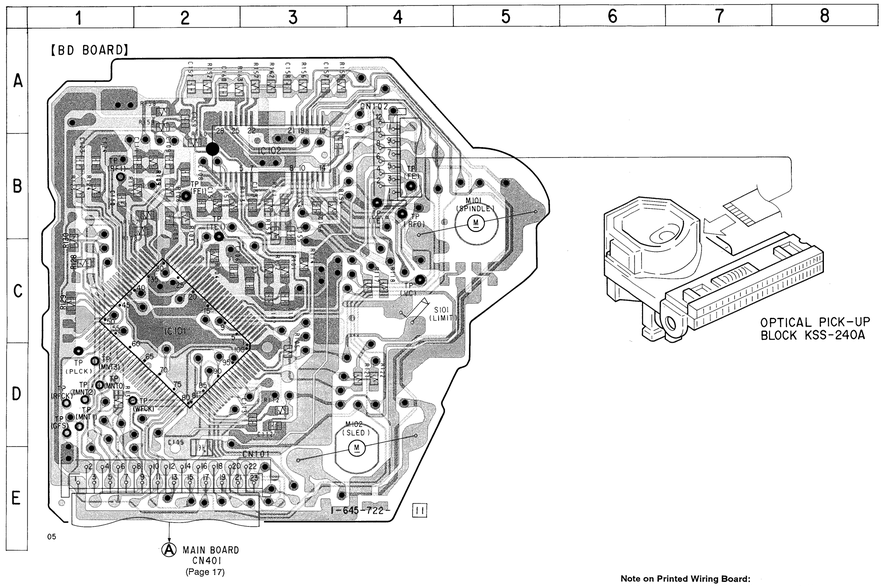


## 5-2. BASE UINT SECTION PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

• See page 9 for Semiconductor Lead Layouts and page 27 for IC Block Diagrams.

• **Semiconductor Location**

| Ref. No. | Location |
|---|---|
| IC101 | C-2 |
| IC102 | B-3 |

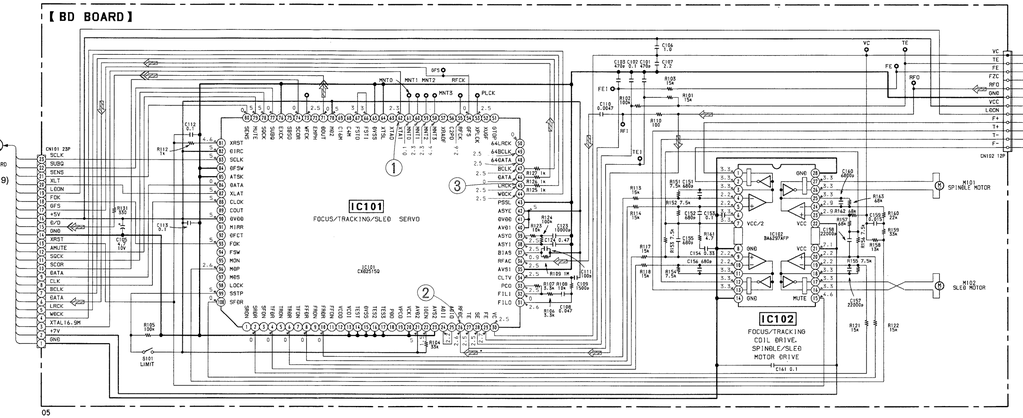






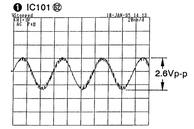
**Note on Printed Wiring Board:**

- ⟷ : parts extracted from the component side.
- ● : Through hole.
- Pattern of the rear side.
- Pattern from the side which enables seeing.

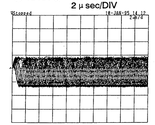



• **Waveforms**

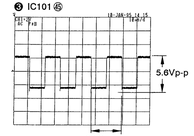
❶ IC101 ㉜




❷ IC101 ㊱ 1.1V/DIV, 2 μ sec/DIV



❸ IC101 ㊲




**Note on Schematic Diagram:**

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

| Note: | Note: |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

- ——— : B + Line.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨ : digital out

## 5-3. MAIN SECTION PRINTED WIRING BOARD

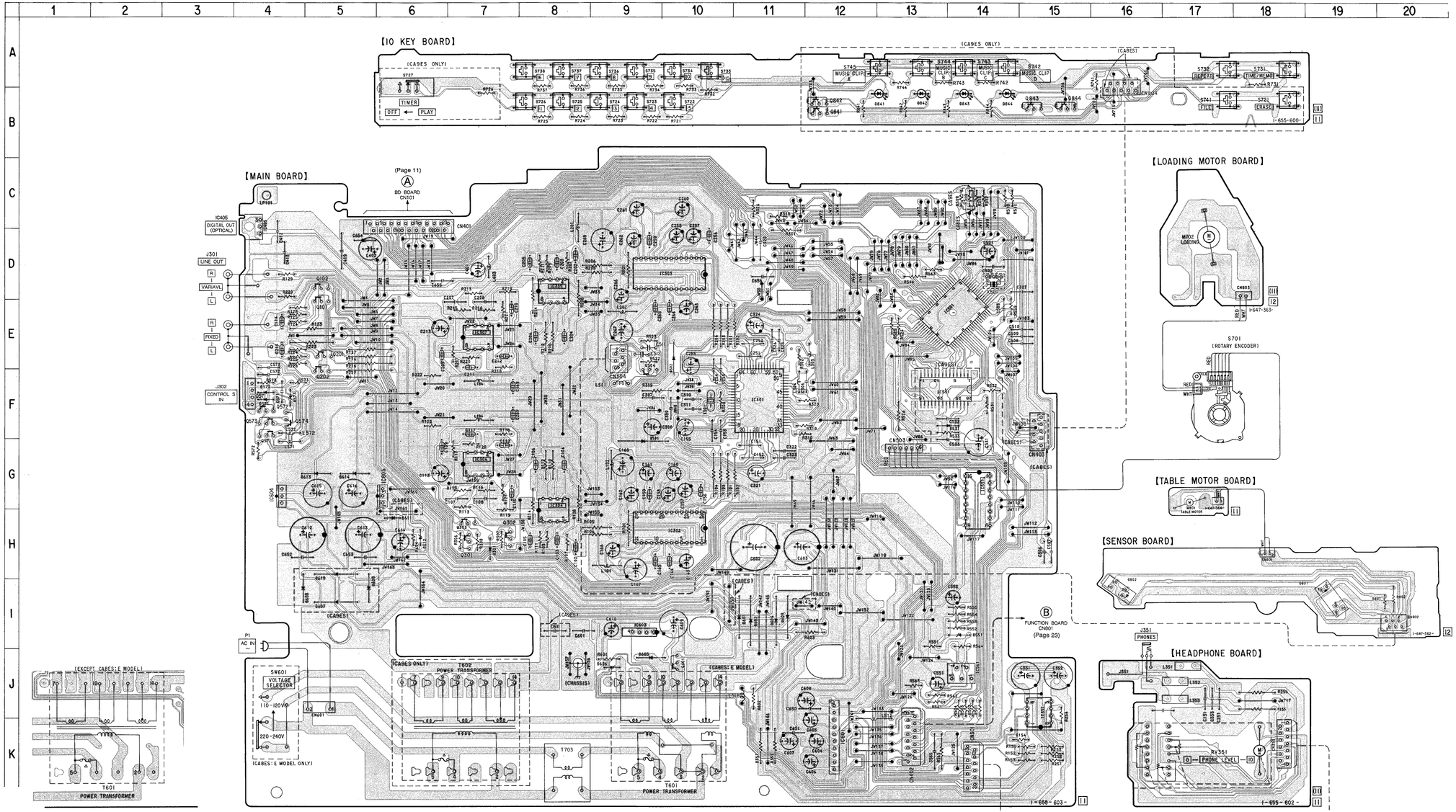
• See page 9 for Semiconductor Lead Layouts.

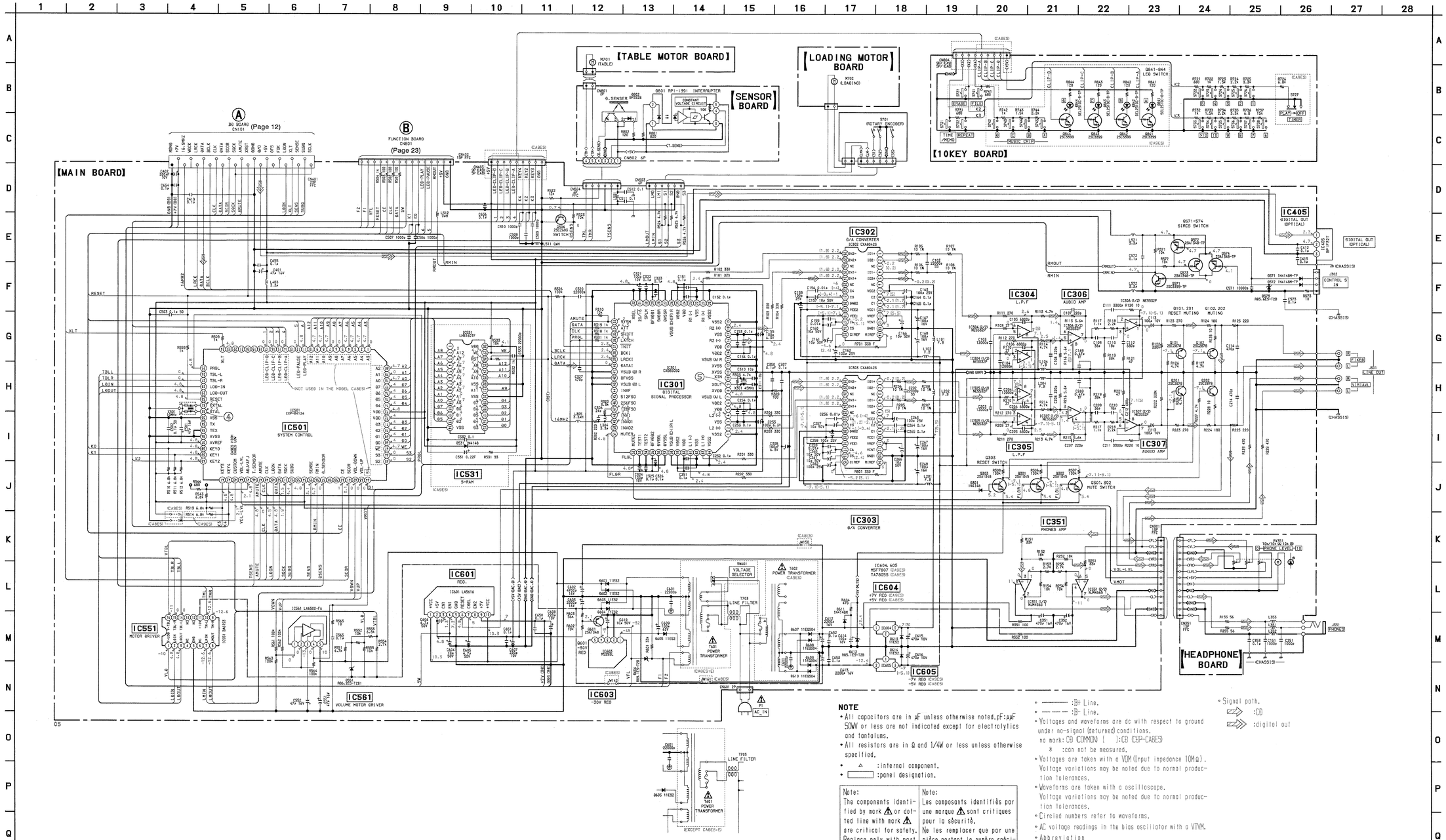
• **Semiconductor Location**

| Ref. No. | Location |
|---|---|
| D301 | H-7 |
| D531 | F-14 |
| D551 | I-14 |
| D571 | F-4 |
| D572 | F-4 |
| D573 | F-4 |
| D601 | I-11 |
| D602 | I-11 |
| D603 | I-11 |
| D604 | I-11 |
| D605 | J-9 |
| D606 | J-9 |
| D607 | I-5 |
| D608 | I-4 |
| D609 | I-5 |
| D610 | H-5 |
| D611 | H-6 |
| D612 | H-6 |
| D613 | G-5 |
| D614 | G-5 |
| D841 | B-13 |
| D842 | B-13 |
| D843 | B-14 |
| D844 | B-14 |
| IC301 | F-11 |
| IC302 | H-10 |
| IC303 | D-10 |
| IC304 | G-8 |
| IC305 | D-8 |
| IC306 | G-7 |
| IC307 | E-7 |
| IC351 | J-15 |
| IC405 | D-4 |
| IC501 | E-13 |
| IC531 | F-13 |
| IC551 | G-14 |
| IC561 | J-14 |
| IC601 | K-12 |
| IC603 | I-9 |
| IC604 | G-4 |
| IC605 | G-6 |
| Q101 | E-5 |
| Q102 | D-5 |
| Q201 | E-5 |
| Q202 | F-5 |
| Q301 | H-7 |
| Q302 | H-7 |
| Q303 | H-7 |
| Q504 | F-9 |
| Q571 | F-4 |
| Q572 | F-4 |
| Q573 | F-4 |
| Q574 | F-4 |
| Q601 | J-10 |
| Q841 | B-12 |
| Q842 | B-12 |
| Q843 | B-15 |
| Q844 | B-15 |

**Note on Printed Wiring Board:**

- ○——— : parts extracted from the component side.
- Abbreviation
  CA8ES: CDP-CA8ES
  CA9ES: CDP-CA9ES






**NOTE**

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantaloums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : Internal component.
- ▭ : panel designation.

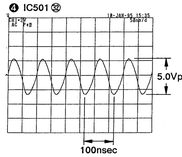
| Note: | Note: |
|---|---|
| The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

- ——— : B+ Line.
- ——— : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: CD (COMMON [ ]: CD CDP-CA8ES)
  * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- AC voltage readings in the bias oscillator with a VTVM.
- Abbreviation
  CA8ES : CDP-CA8ES
  CA9ES : CDP-CA9ES

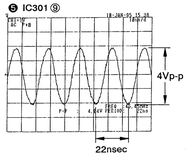
- Signal path.
  ⇨ : CD
  ⇨ : digital out

• Waveforms

❹ IC501 ㉒

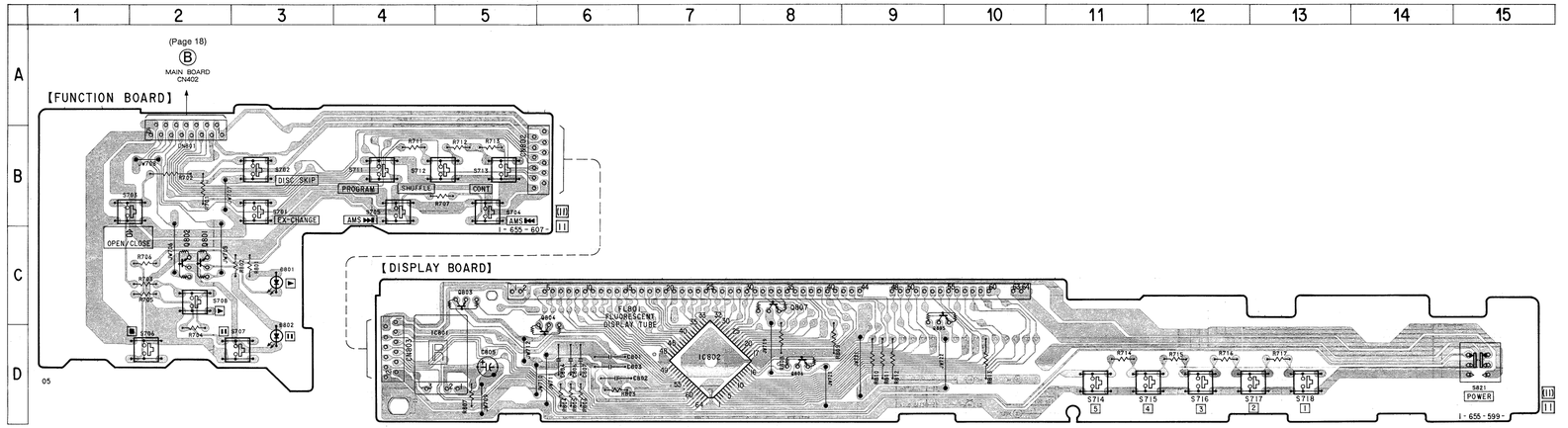



❺ IC301 ⑨



## 5-5. DISPLAY CONTROL SECTION PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

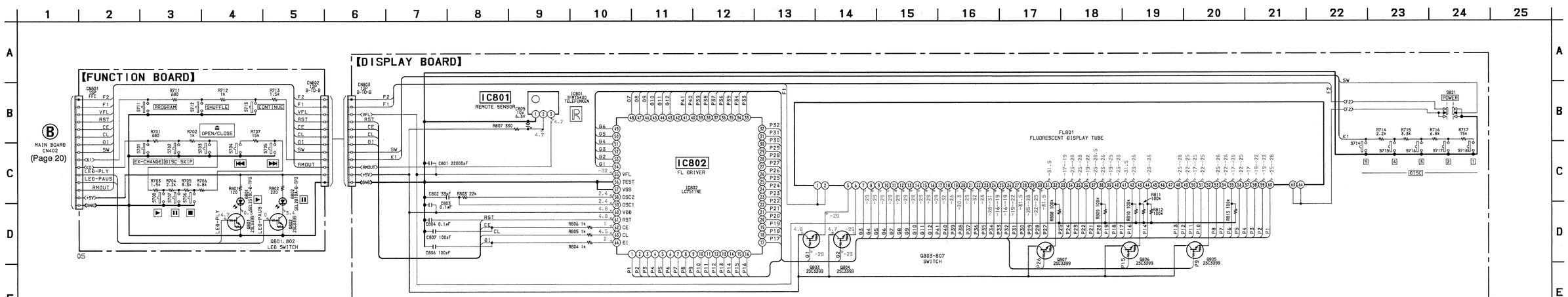
• See page 9 for Semiconductor Lead Layouts and page 27 for IC Block Diagrams.




• **Semiconductor Location**

| Ref. No. | Location |
|---|---|
| D801 | C-3 |
| D802 | D-3 |
| IC801 | D-5 |
| IC802 | D-7 |
| Q801 | C-2 |
| Q802 | C-2 |
| Q803 | C-5 |
| Q804 | D-6 |
| Q805 | C-9 |
| Q806 | D-8 |
| Q807 | C-8 |

Note:
- •——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.




**NOTE**

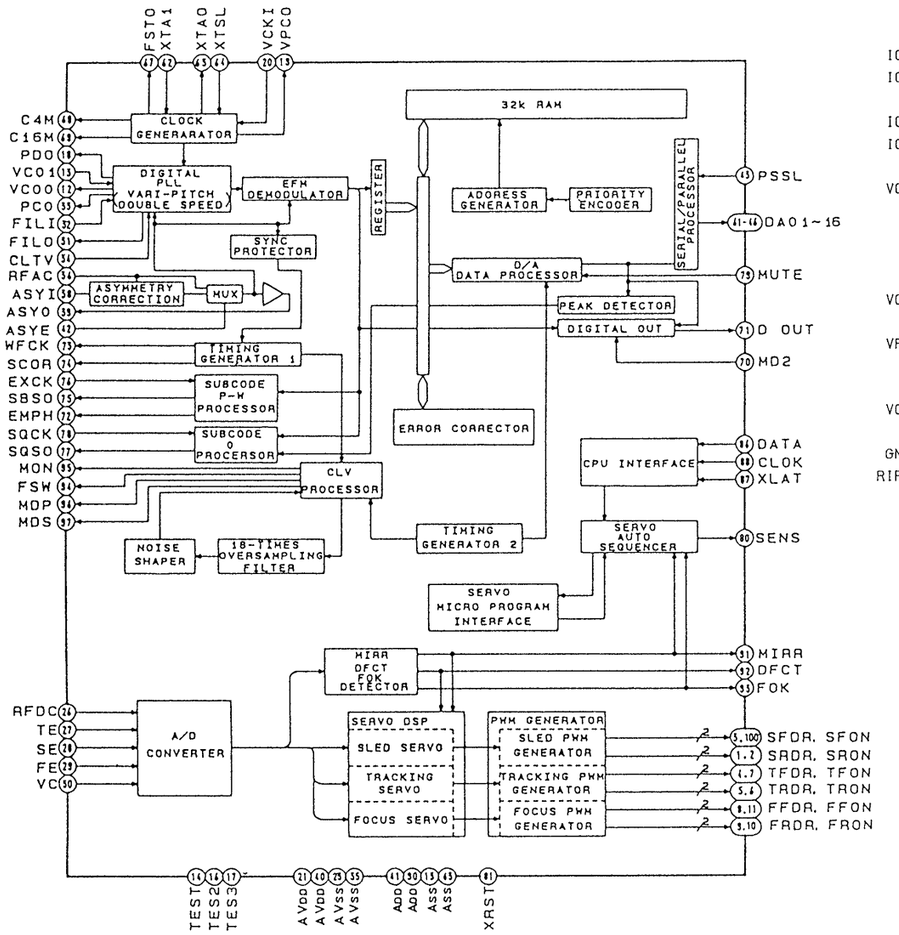
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▭ :panel designation.

- ——— :B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.

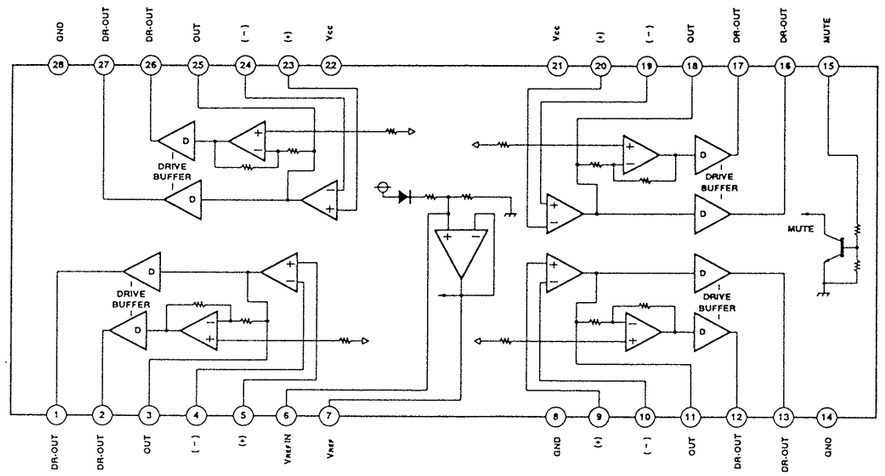
no mark:
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- AC voltage readings in the bias oscillator with a VTVM.

## • IC Block Diagrams

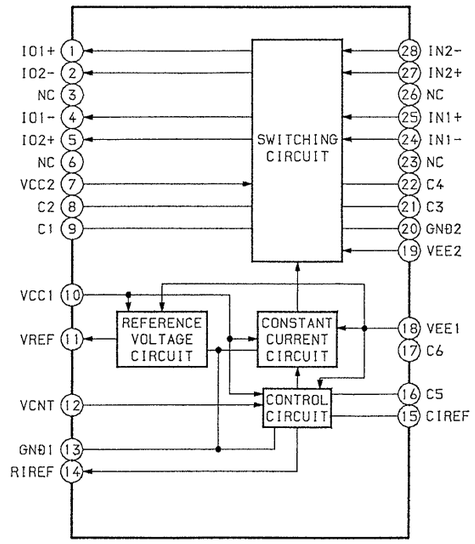
### IC101 CXD2515Q (BD BOARD)



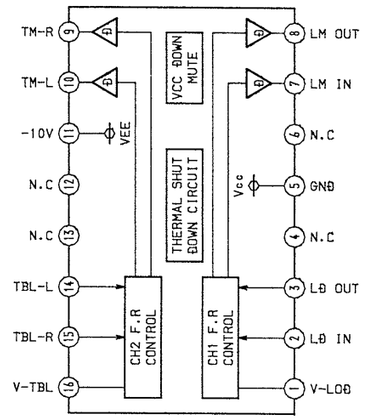

### IC102 BA6297AFP (BD BOARD)



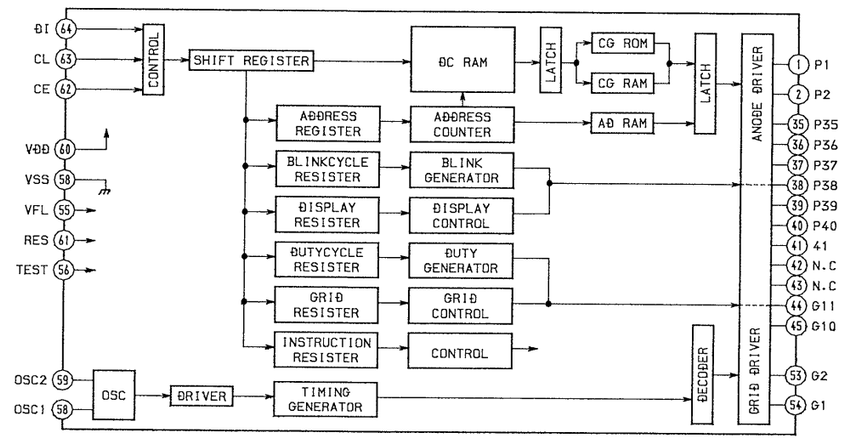

### IC302 CXA8042S (MAIN BOARD)


IO1+ IO2- NC IO1- IO2+ NC VCC2 C2 C1
VCC1 VREF VCNT GND1 RIREF
IN2- IN2+ NC IN1+ IN1- NC C4 C3 GND2 VEE2
VEE1 C6 C5 CIREF
SWITCHING CIRCUIT
REFERENCE VOLTAGE CIRCUIT
CONSTANT CURRENT CIRCUIT
CONTROL CIRCUIT

### IC551 BA6193 (MAIN BOARD)


TM-R TM-L -10V N.C N.C N.C TBL-L TBL-R V-TBL
VEE
VCC DOWN MUTE
THERMAL SHUT DOWN CIRCUIT
Vcc
CH2 F.R CONTROL
CH1 F.R CONTROL
LM OUT LM IN N.C GND N.C LO OUT LO IN V-LOO

### IC802 LC75721E (DISPLAY BOARD)



## 5-6. IC PIN FUNCTION DESCRIPTION

### IC501 CXP84124-026Q (MAIN BOARD)

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 1 to 10 | A3 to A12 | O | S-RAM address control output pin. |
| 11 | LED-PLAY | O | ▷ LED ON/OFF pin. |
| 12 | LED-PAUSE | O | ❚❚ LED ON/OFF pin. |
| 13 | — | — | Not used. |
| 14 | LED-CLIP-A | O | LED ON/OFF pin. (Not used in the model CDP-CA8ES) |
| 15 | LED-CLIP-B | O | |
| 16 | LED-CLIP-C | O | |
| 17 | LED-CLIP-D | O | |
| 18 to 23 | — | — | Not used. |
| 24 | XLT | O | Serial data latch signal output pin. |
| 25 | PRGL | O | Serial data latch signal output pin to Digital Signal processor. |
| 26 | TBL-L | O | Table motor control pin. |
| 27 | TBL-R | O | |
| 28 | LOD-IN | O | Loading motor control pin. |
| 29 | LOD-OUT | O | |
| 30 | RESET | I | Reset signal input pin. |
| 31 | EXTAL | I | 8 MHz clock input pin. |
| 32 | XTAL | O | 8 MHz clock output pin. |
| 33 | Vss | — | GND |
| 34 | TX | — | Not used. |
| 35 | TEX | — | GND |
| 36 | AVss | — | GND |
| 37 | AVREF | I | Reference voltage input pin of A/D conversion. (Connected GND) |
| 38 to 42 | KEY0 to KEY4 | I | Key input pin. (A/D) |
| 43 | CUSTOM | — | GND (CDP-CA8ES), +5V (CDP-CA9ES) |
| 44 | VOL LEVEL | I | Volume level input pin. |
| 45 | ADJ/AFJ | I | Test mode pin. Nomally: "H" |
| 46 | T. SENSOR | I | Slit sensor of disc table input pin. |
| 47 | AMUTE | O | Analog muting control signal output pin. |
| 48 | CLK | O | Serial clock output pin to BD. |
| 49 | LDON | O | Optical pick-up laser diode control pin. ON: "H" |
| 50 | DATA | O | Serial data output pin. |
| 51 | SQCLK | O | Subcode Q data readout clock output pin. |
| 52 | SUBQ | I | Subcord Q data input pin. |
| 53 | — | — | Not used. |
| 54 | — | — | Connected to +5 V. |
| 55 | SENSE | I | SENSE signal input pin. |
| 56 | RM IN | I | Remote control signal input pin. |
| 57 | D. SENSOR | I | Disc sensor input pin. |
| 58, 59 | — | — | Not used. |

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 60 | CE | O | Chip enable output. |
| 61 | SCOR | I | Subcord Q data readout timing signal input pin. |
| 62 | VOL-DOWN | O | Volume motor drive pin. |
| 63 | VOL-UP | O | |
| 64 to 66 | S1 to S3 | I | Rotary encorder input. (S701) (Not used in the model CDP-CA8ES) |
| 67 | $\overline{WE}$ | O | Write enable output pin. (Not used in the model CDP-CA8ES) |
| 68 to 71 | D0 to D3 | O | FL segment output pin. (Not used in the model CDP-CA8ES) |
| 72 | $V_{DD}$ | — | Connected to +5 V. |
| 73 | $V_{DD}$ | — | Power supply pin. (+5 V) |
| 74 to 77 | D4 to D7 | O | FL timing output pin. |
| 78 to 80 | A0 to A2 | O | S-RAM address control output pin. |

## IC101 CXD2515Q (BD BOARD)

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 1 | SRON | — | Not used. |
| 2 | SRDR | O | Sled drive signal output. |
| 3 | SFON | — | Not used. |
| 4 | TFDR | O | Tracking drive signal output. |
| 5 | TRON | — | Not used. |
| 6 | TRDR | O | Tracking drive signal output. |
| 7 | TFON | — | Not used. |
| 8 | FFDR | O | Focus drive signal output. |
| 9 | FRON | — | Not used. |
| 10 | FRDR | O | Focus drive signal output. |
| 11 | FFON | O | Not used. |
| 12 | VCOO | — | Not used. |
| 13 | VCOI | I | Connected to the oscillating circuit for analog EFM PLL. |
| 14 | TEST | I | TEST terminal, Normally connected to ground. |
| 15 | Vss | — | Digital ground. |
| 16 | TES2 | I | TEST terminal. Normally connected to ground. |
| 17 | TES3 | I | TEST terminal. Normally connected to ground. |
| 18 | PDO | — | Not used. |
| 19 | VPCO | — | Not used. |
| 20 | VCKI | I | Clock input from external VCO for variable pitch. fcenter=16.9344 MHz. |
| 21 | AVDD | — | Analog power supply. |
| 22 | IGEN | I | Connected to current source reference resistor for OP amplifier. |
| 23 | AVss | — | Analog ground. |
| 24 | ADII | I | A/D converter input. |
| 25 | ADIO | O | OP amplifier output. |
| 26 | RFDC | I | RF signal input. Input range 2.15 – 5.0 V (On VDD=AVDD=5.0 V). |
| 27 | TE | I | Tracking error signal input. Input range 2.5 ± 1.0 V (On VDD=AVDD=5.0 V). |
| 28 | SE | I | Sled error signal input. Input range 2.5 ± 1.0 V (On VDD=AVDD=5.0 V). |
| 29 | FE | I | Focus error signal input. Input range 2.5 ± 1.0 V(On VDD=AVDD=5.0 V). |
| 30 | VC | I | Center point of voltage input. |
| 31 | FILO | O | Filter output for master PLL. |
| 32 | FILI | I | Filter input for master PLL. |
| 33 | PCO | O | Charge pump output for master PLL. |
| 34 | CLTV | I | VCO for master control voltage input. |
| 35 | AVss | — | Analog ground. |
| 36 | RFAC | I | EFM signal input. |
| 37 | BIAS | I | Asymmetry circuit constant-current input. |
| 38 | ASYI | I | Asymmetry comparating voltage input. |
| 39 | ASYO | O | EFM full swing output (L=VSS, H=VDD). |
| 40 | AVDD | — | Analog power supply. |

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 41 | VDD | — | Digital power supply. |
| 42 | ASYE | I | Asymmetry circuit ON/OFF (L=OFF, H=ON). |
| 43 | PSSL | I | Audio data output mode select input. L: Serial output H: Parallel output. |
| 44 | WDCK | O | 48 bit slot D/A interface. Word clock f=2Fs. |
| 45 | LRCK | O | 48 bit slot D/A interface. LR clock f=FS. |
| 46 | DA16 | O | DA16 output when PSLL=1. 48 bit slot serial data when PSSL=0. |
| 47 | DA15 | O | DA15 output when PSSL=1. 48 bit slot bit clock when PSSL=0. |
| 48 | DA14 | — | Not used. |
| 49 | DA13 | — | Not used. |
| 50 | DA12 | — | Not used. |
| 51 | GTOP | O | DA11 output when PSSL=1. GTOP output when PSSL=0. |
| 52 | XUGF | — | Not used. |
| 53 | XPLCK | — | Not used. |
| 54 | GFS | O | DA08 output when PSSL=1. GFS output when PSSL=0. |
| 55 | RFCK | O | DA07 output when PSSL=1. RFCK output when PSS=0. |
| 56 | C2PO | — | Not used. |
| 57 | XRAOF | O | DA05 output when PSSL=1. XRAOF output when PSSL=0. |
| 58 | MNT3 | — | Not used. |
| 59 | MNT2 | — | Not used. |
| 60 | MNT1 | — | Not used. |
| 61 | MNT0 | — | Not used. |
| 62 | XTAI | I | Input from X'tal oscillating circuit. 16.9344 MHz or 33.8688 MHz input. |
| 63 | XTAO | O | X'tal oscillating circuit output. |
| 64 | XTSL | I | X'tal select input. L: 16.9344 MHz. H: 33.8688MHz. |
| 65 | VSS | — | Digital ground. |
| 66 | FSTI | I | 2/3 divided signal of pins ⑫ and ⑬ input. |
| 67 | FSTO | O | 2/3 divided signal of pins ⑫ and ⑬ output. |
| 68 | C4M | O | 4.2336 MHz output. Changed at the same time on variable pitch. |
| 69 | C16M | — | Not used. |
| 70 | MD2 | I | Digital out ON/OFF control. L=OFF, H=ON. |
| 71 | DOUT | O | Digital-out output. |
| 72 | EMPH | — | Not used. |
| 73 | WFCK | O | WFCK output. |
| 74 | SCOR | O | Sub-code sync. output. (H when sub-code sync. So or SI is detected.) |
| 75 | SBSO | — | Not used. |
| 76 | EXCK | — | Not used. |
| 77 | SQSO | O | Sub Q 80 bit output. PCM peak data, level data 16 bit output. |
| 78 | SQCK | I | Clock for SQSO read out input. |
| 79 | MUTE | I | Mute switch. H: Mute. |
| 80 | SENS | O | SENS output to CPU. |

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 81 | XRST | I | System reset. L: Reset. |
| 82 | DIRC | — | Not used. |
| 83 | SCLK | I | Clock for reading SENS serial data. |
| 84 | DFSW | I | DFCT switch. H: Circuit for DFCT OFF. |
| 85 | ATSK | I | For anti-shock. |
| 86 | DATA | I | Serial data from CPU input. |
| 87 | XLAT | I | Latch from CPU input. |
| 88 | CLOK | I | Clock for serial data transferring from CPU input. |
| 89 | COUT | — | Not used. |
| 90 | $V_{DD}$ | — | Digital power supply. |
| 91 | MIRR | — | Not used. |
| 92 | DFCT | — | Not used. |
| 93 | FOK | O | Focus OK input. |
| 94 | FSW | — | Not used. |
| 95 | MON | — | Not used. |
| 96 | MDP | O | Spindle motor servo control. |
| 97 | MDS | O | Spindle motor servo control. |
| 98 | LOCK | — | Not used. |
| 99 | SSTP | I | Most inner circuit on disc detection signal. |
| 100 | SFDR | O | Sled drive output. |

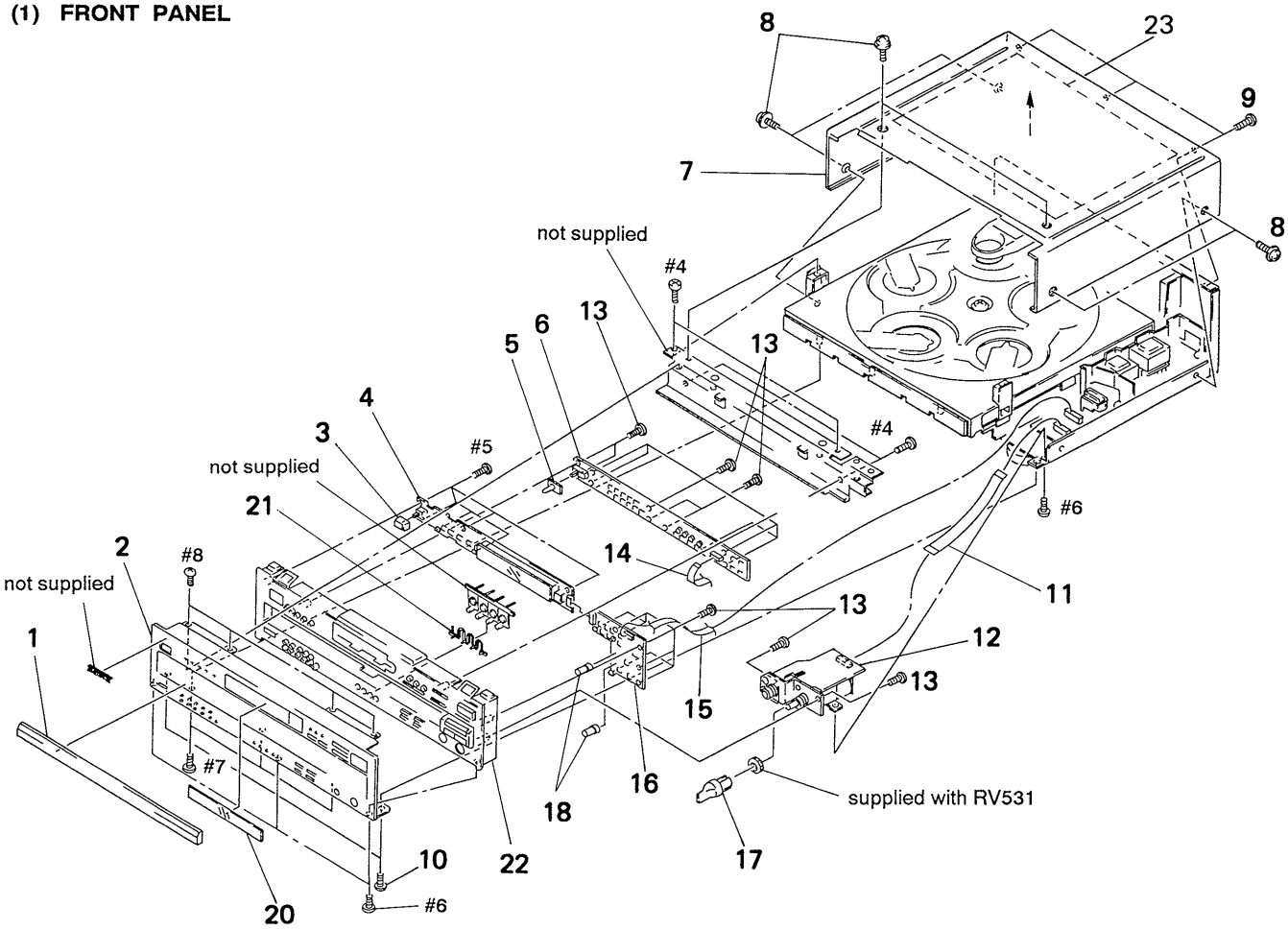
# SECTION 6
# EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  CND: Canadian
  CA9ES: CDP-CA9ES
  CA8ES: CDP-CA8ES
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

| |
|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. |
| Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le neméro spécifié. |

## (1) FRONT PANEL

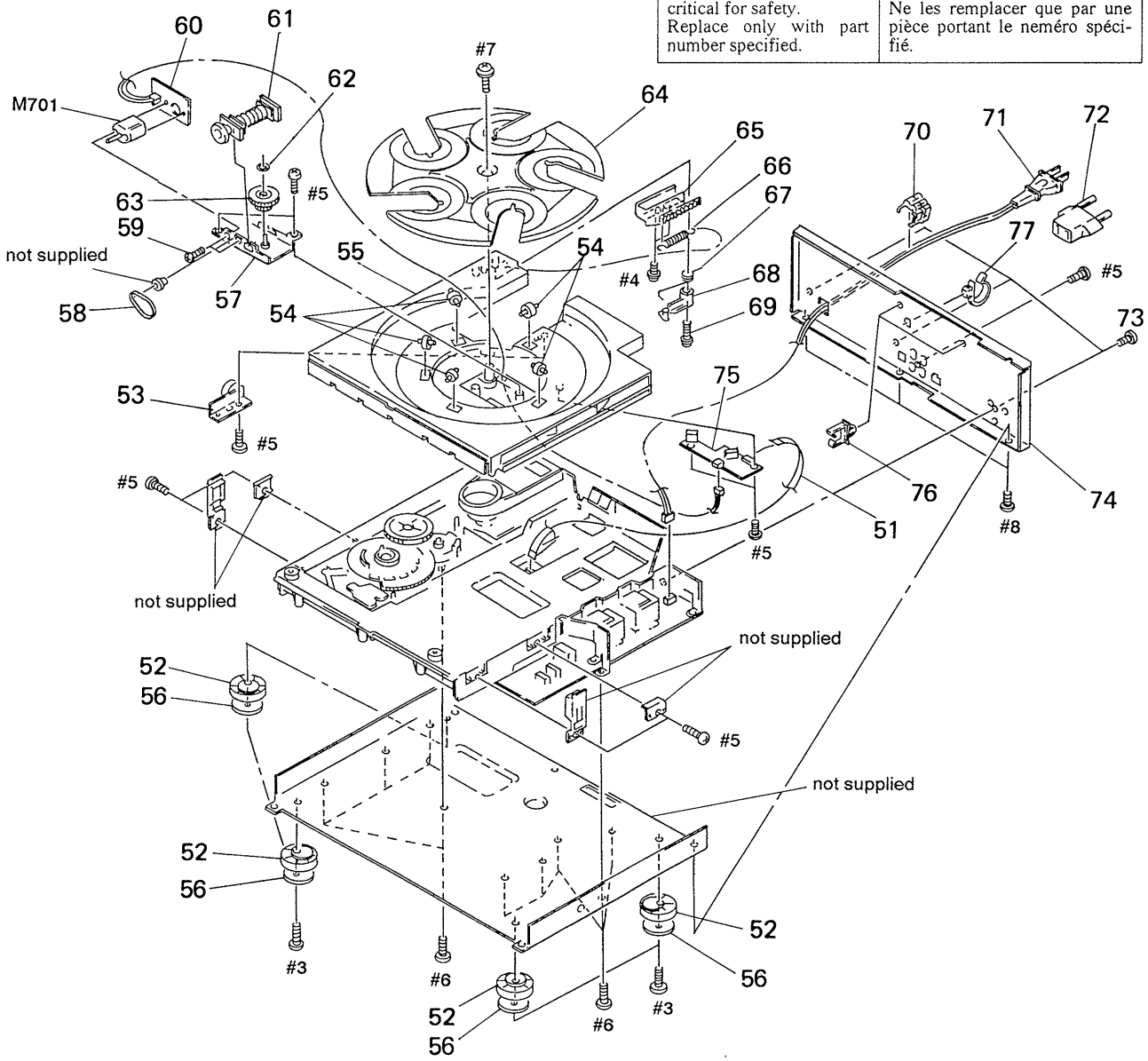



| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | 4-972-205-01 | PANEL, LOADING (CA9ES) | |
| 1 | 4-972-205-11 | PANEL, LOADING (CA8ES) | |
| 2 | 4-972-224-01 | PANEL, FRONT (CA9ES) | |
| 2 | 4-972-224-21 | PANEL, FRONT (CA8ES:US, CND) | |
| 2 | 4-972-224-31 | PANEL, FRONT (CA8ES:AEP, E) | |
| 3 | 4-922-921-01 | BUTTON (POWER) | |
| * 4 | A-4673-466-A | DISPLAY BOARD, COMPLETE | |
| 5 | 3-917-216-11 | KNOB (TIMER) (CA9ES) | |
| * 6 | A-4673-462-A | 10 KEY BOARD, COMPLETE (CA8ES) | |
| * 6 | A-4673-467-A | 10 KEY BOARD, COMPLETE (CA9ES) | |
| 7 | 4-972-223-01 | CASE | |
| 8 | 3-704-366-01 | SCREW (CASE) (M3X8) | |
| 9 | 3-704-515-21 | SCREW (BV/RING) | |
| 10 | 3-703-685-21 | SCREW (+BV 3X8) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 11 | 1-769-457-11 | WIRE (FLAT TYPE) (13 CORE) | |
| * 12 | 1-655-602-11 | HEADPHONE BOARD | |
| 13 | 4-951-620-01 | SCREW (2.6X8), +BVTP | |
| 14 | 1-769-455-11 | WIRE (FLAT TYPE) (9 CORE) (CA9ES) | |
| 14 | 1-769-458-11 | WIRE (FLAT TYPE) (5 CORE) (CA8ES) | |
| 15 | 1-769-456-11 | WIRE (FLAT TYPE) (15 CORE) | |
| * 16 | 1-665-601-11 | FUNCTION BOARD | |
| 17 | 4-950-189-01 | KNOB (A) (VOL) | |
| * 18 | 3-362-478-11 | HOLDER (T), LED | |
| 20 | 4-972-214-01 | PLATE, INDICATION | |
| * 21 | 4-972-215-01 | INDICATOR (CLIP) (CA9ES) | |
| 22 | X-4945-738-1 | BASE ASSY, PANEL (CA9ES) | |
| 22 | X-4945-739-1 | BASE ASSY, PANEL (CA8ES) | |
| 23 | 4-974-014-01 | REINFORCEMENT (TOP PLATE) | |

| Note: | Note: |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié. |

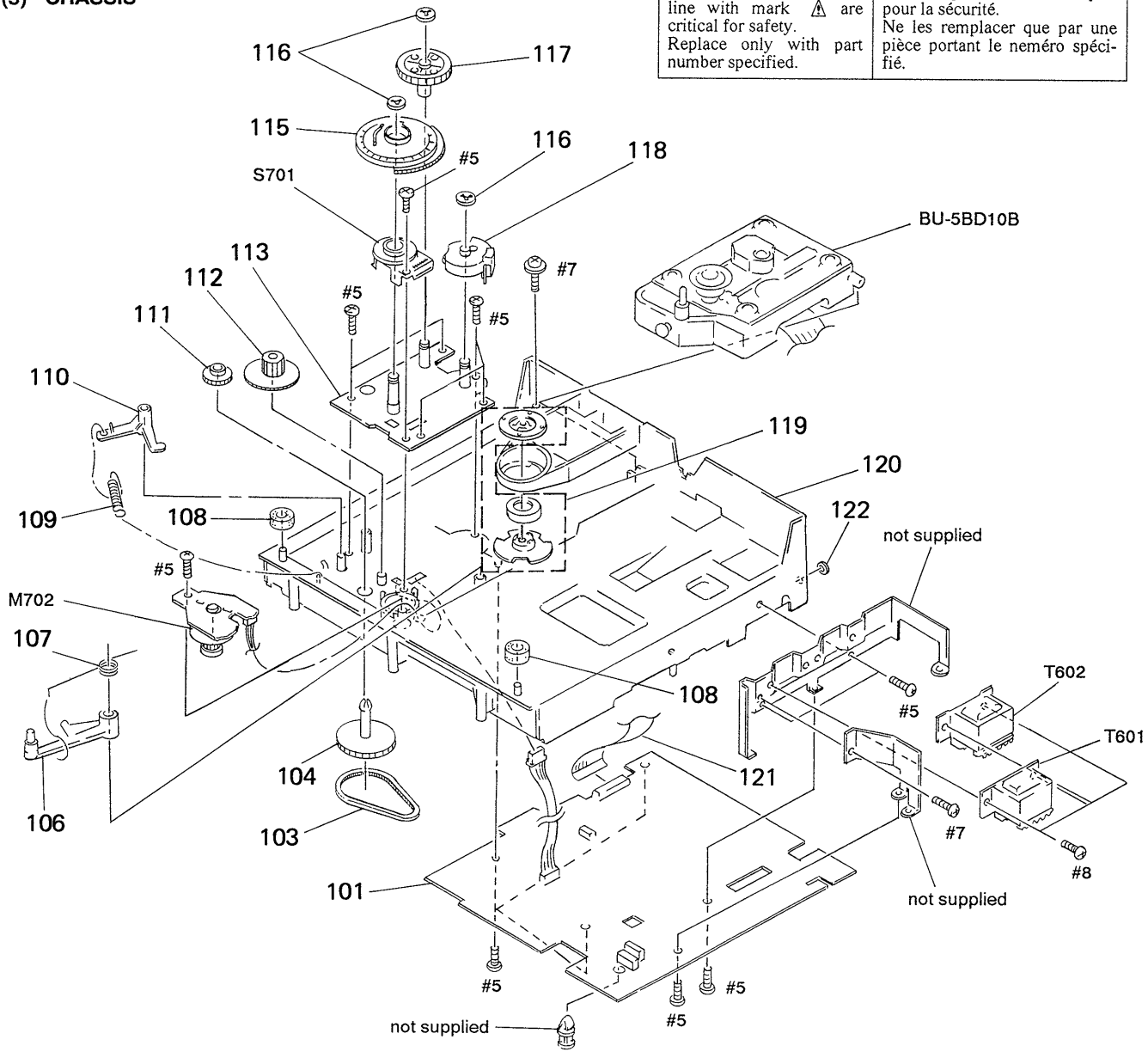
## (2) DISC TABLE




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | 1-751-052-11 | WIRE (FLAT TYPE) (6 CORE) | |
| 52 | 4-970-123-01 | FOOT (F50180S) | |
| 53 | X-4943-480-1 | BRACKET (ROLLER D) ASSY | |
| 54 | X-4924-457-1 | ROLLER ASSY | |
| 55 | 4-957-298-21 | TABLE (A), DISK | |
| 56 | 4-970-124-01 | CUSHION (F50180S) | |
| 57 | X-4943-477-1 | BRACKET (RM) ASSY | |
| 58 | 4-957-304-01 | BELT (RM) | |
| 59 | 4-965-659-01 | SCREW (+B 2X2.2) | |
| * 60 | 1-647-364-11 | TABLE MOTOR BOARD | |
| 61 | X-4943-479-1 | GEAR (ROTARY A) ASSY | |
| 62 | 3-325-697-01 | WASHER | |
| 63 | 4-957-284-01 | GEAR (LOTARY B) | |
| 64 | 4-957-299-21 | TABLE (B), DISC | |
| 65 | 4-957-292-01 | SLIDER (RACK) | |
| 66 | 4-957-294-01 | SPRING (D.T), TENSION | |
| 67 | 4-957-293-01 | SPRING (RACK RELEASE) | |
| 68 | 4-957-291-01 | LEVER (RACK RELEASE) | |
| 69 | 4-957-868-01 | SCREW (+PTPWH 2.6X20) | |
| * 70 | 3-703-244-00 | BUSHING (2104), CORD | |
| ⚠71 | 1-575-651-21 | CORD, POWER (CA8ES:AEP) | |
| ⚠71 | 1-590-926-11 | CORD, POWER (CA8ES:US,CND/CA9ES) | |
| ⚠71 | 1-696-027-11 | CORD, POWER (CA8ES:E) | |
| 72 | 1-569-007-11 | ADAPTER, CONVERSION 2P (CA8ES:E) | |
| 73 | 3-704-366-01 | SCREW (CASE) (M3X8) | |
| * 74 | 4-972-221-02 | PANEL, BACK (CA9ES:US) | |
| * 74 | 4-972-221-12 | PANEL, BACK (CA9ES:CND) | |
| * 74 | 4-972-221-32 | PANEL, BACK (CA8ES:US) | |
| * 74 | 4-972-221-42 | PANEL, BACK (CA8ES:CND) | |
| * 74 | 4-972-221-52 | PANEL, BACK (CA8ES:AEP) | |
| * 74 | 4-972-221-62 | PANEL, BACK (CA8ES:E) | |
| 75 | 1-647-362-11 | SENSOR BOARD | |
| * 76 | 4-974-684-01 | CLAMP, WIRE | |
| * 77 | 4-949-235-01 | HOOK | |
| M701 | A-4660-322-A | MOTOR ASSY, ROTARY (TABLE) | |

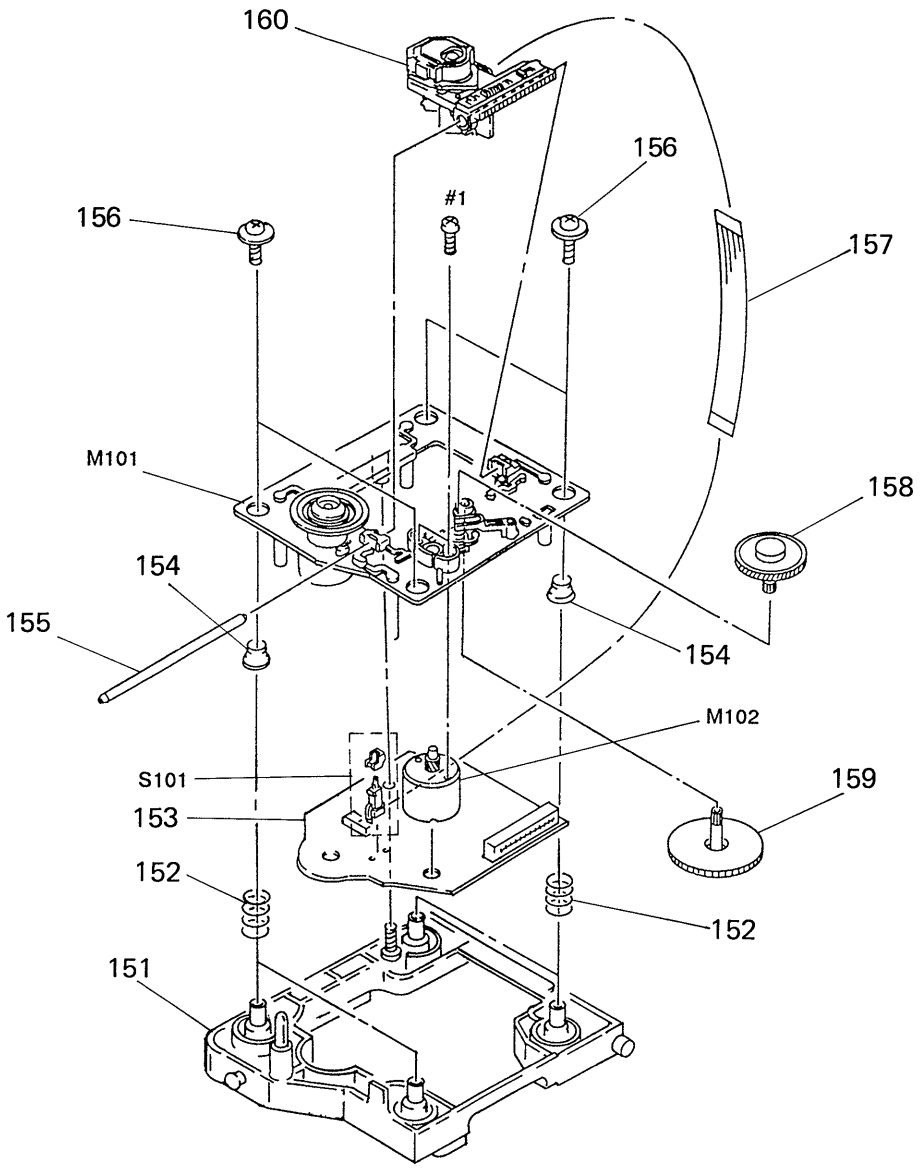
## (3) CHASSIS

| Note: | Note: |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié. |




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 101 | A-4673-463-A | MAIN BOARD, COMPLETE (CA8ES:US, CND) | |
| * 101 | A-4673-469-A | MAIN BOARD, COMPLETE (CA8ES:AEP) | |
| * 101 | A-4673-471-A | MAIN BOARD, COMPLETE (CA8ES:E) | |
| * 101 | A-4673-473-A | MAIN BOARD, COMPLETE (CA9ES) | |
| 103 | 4-944-490-01 | BELT (TIMING) | |
| 104 | X-4941-529-1 | PULLEY ASSY | |
| 106 | 4-957-279-01 | LEVER, LOCK | |
| 107 | 4-957-281-01 | SPRING (LOCK LEVER) | |
| * 108 | 4-951-619-01 | CUSHION (A) | |
| 109 | 4-962-087-01 | SPRING (S), TENSION | |
| 110 | 4-957-285-01 | LEVER, SET | |
| 111 | 4-934-375-01 | GEAR (LOADING B) | |
| 112 | 4-957-303-01 | GEAR (LOADING C) | |
| 113 | X-4943-478-1 | BRACKET (GEAR) ASSY | |
| 115 | 4-957-288-01 | GEAR (MAIN) | |
| 116 | 4-957-283-01 | WASHER (5), STOPPER | |
| 117 | 4-957-287-01 | GEAR (REV) | |
| 118 | 4-957-286-01 | GEAR (U/D) | |
| * 119 | 1-452-538-11 | MAGNET | |
| * 120 | 4-957-300-03 | CHASSIS | |
| 121 | 1-765-443-11 | WIRE (FLAT TYPE) (23 CORE) | |
| 122 | 4-949-302-81 | WASHER | |
| M702 | A-4604-834-A | MOTOR ASSY, LOADING | |
| S701 | 1-466-996-11 | ENCODER, ROTARY | |
| ⚠T601 | 1-427-859-11 | TRANSFORMER, POWER (CA8ES:US, CND/CA9ES) | |
| ⚠T601 | 1-427-860-11 | TRANSFORMER, POWER (CA8ES:AEP) | |
| ⚠T601 | 1-427-946-11 | TRANSFORMER, POWER (CA8ES:E) | |
| ⚠T602 | 1-427-859-11 | TRANSFORMER, POWER (CA9ES) | |

## (4) BASE UNIT (BU-5BD10B)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 151 | 4-957-289-01 | HOLDER (BU) | |
| 152 | 4-948-503-01 | SPRING (BU), COMPRESSION | |
| * 153 | A-4649-432-A | BD BOARD, COMPLETE | |
| 154 | 4-951-940-01 | INSULATOR (BU) | |
| 155 | 4-917-565-01 | SHAFT, SLED | |
| 156 | 4-933-134-01 | SCREW (+PTPWH M2.6X6) | |
| 157 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | |
| 158 | 4-917-567-01 | GEAR (M) | |
| 159 | 4-917-564-01 | GEAR (P), FLATNESS | |
| ⚠160 | 8-848-144-11 | DEVICE, OPTICAL KSS-240A | |
| M101 | X-4917-523-3 | BASE (OUT SERT) ASSY (SPINDLE MOTOR) | |
| M102 | X-4917-504-1 | MOTOR, ASSY (SLED MOTOR) | |
| S101 | 1-572-085-11 | SWITCH, LEAF (LIMIT) | |

| Note: | Note: |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié. |

**10 KEY** **BD**

# SECTION 7
# ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviations
  CND : Canadian  CA8ES : CDP-CA8ES  CA9ES : CDP-CA9ES
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA..  uPA..: μPA..
  uPB..: μPB..  uPC..: μPC..  uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref.No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| * | A-4673-462-A | 10 KEY BOARD, COMPLETE (CA8ES) | | | | |
| | | ********** | | | | |
| * | A-4673-467-A | 10 KEY BOARD, COMPLETE (CA9ES) | | | | |
| | | ********** | | | | |
| * | 3-362-478-11 | HOLDER (T), LED | | | | |
| | | < CONNECTOR > | | | | |
| CN804 | 1-695-328-11 | PIN, CONNECTOR (PC BOARD) 5P | | | | (CA8ES) |
| CN804 | 1-568-828-11 | PIN, CONNECTOR (PC BOARD) 9P | | | | (CA9ES) |
| | | < DIODE > | | | | |
| D841 | 8-719-303-02 | DIODE SEL2510C-D (MUSIC CLIP A) | | | | (CA9ES) |
| D842 | 8-719-303-02 | DIODE SEL2510C-D (MUSIC CLIP B) | | | | (CA9ES) |
| D843 | 8-719-303-02 | DIODE SEL2510C-D (MUSIC CLIP C) | | | | (CA9ES) |
| D844 | 8-719-303-02 | DIODE SEL2510C-D (MUSIC CLIP D) | | | | (CA9ES) |
| | | < TRANSISTOR > | | | | |
| Q841 | 8-729-900-89 | TRANSISTOR DTC144ES | | | | (CA9ES) |
| Q842 | 8-729-900-89 | TRANSISTOR DTC144ES | | | | (CA9ES) |
| Q843 | 8-729-900-89 | TRANSISTOR DTC144ES | | | | (CA9ES) |
| Q844 | 8-729-900-89 | TRANSISTOR DTC144ES | | | | (CA9ES) |
| | | < RESISTOR > | | | | |
| R721 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W F | |
| R722 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W F | |
| R723 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W F | |
| R724 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W F | |
| R725 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W F | |
| R726 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W F | (CA9ES) |
| R731 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W F | |
| R732 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W F | |
| R733 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W F | |
| R734 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W F | |
| R735 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W F | |
| R736 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W F | |
| R737 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R741 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W F | (CA9ES) |
| R742 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W F | (CA9ES) |
| R743 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W F | (CA9ES) |
| R744 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W F | (CA9ES) |
| R841 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W F | (CA9ES) |
| R842 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W F | (CA9ES) |
| R843 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W F | (CA9ES) |
| R844 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W F | (CA9ES) |
| | | < SWITCH > | | | | |
| S721 | 1-554-303-21 | SWITCH, TACTILE (ERASE) | | | | (CA9ES) |
| S722 | 1-554-303-21 | SWITCH, TACTILE (5) | | | | |
| S723 | 1-554-303-21 | SWITCH, TACTILE (4) | | | | |
| S724 | 1-554-303-21 | SWITCH, TACTILE (3) | | | | |
| S725 | 1-554-303-21 | SWITCH, TACTILE (2) | | | | |
| S726 | 1-554-303-21 | SWITCH, TACTILE (1) | | | | |
| S727 | 1-570-157-51 | SWITCH, SLIDE (TIMER) | | | | (CA9ES) |
| S731 | 1-554-303-21 | SWITCH, TACTILE (TIME/MEMO) | | | | |
| S732 | 1-554-303-21 | SWITCH, TACTILE (REPEAT) | | | | |
| S733 | 1-554-303-21 | SWITCH, TACTILE (>10) | | | | |
| S734 | 1-554-303-21 | SWITCH, TACTILE (10) | | | | |
| S735 | 1-554-303-21 | SWITCH, TACTILE (9) | | | | |
| S736 | 1-554-303-21 | SWITCH, TACTILE (8) | | | | |
| S737 | 1-554-303-21 | SWITCH, TACTILE (7) | | | | |
| S738 | 1-554-303-21 | SWITCH, TACTILE (6) | | | | |
| S741 | 1-554-303-21 | SWITCH, TACTILE (FILE) | | | | (CA9ES) |
| S742 | 1-554-303-21 | SWITCH, TACTILE (MUSIC CLIP D) | | | | (CA9ES) |
| S743 | 1-554-303-21 | SWITCH, TACTILE (MUSIC CLIP C) | | | | (CA9ES) |
| S744 | 1-554-303-21 | SWITCH, TACTILE (MUSIC CLIP B) | | | | (CA9ES) |
| S745 | 1-554-303-21 | SWITCH, TACTILE (MUSIC CLIP A) | | | | (CA9ES) |
| S821 | 1-572-714-11 | SWITCH, PUSH (POWER) | | | | |
| ********** | | | | | | |
| * | A-4649-432-A | BD BOARD, COMPLETE | | | | |
| | | ********** | | | | |
| | | < CAPACITOR > | | | | |
| C101 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V | |
| C102 | 1-163-038-00 | CERAMIC CHIP | 0.1uF | | 25V | |
| C103 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V | |
| C105 | 1-135-155-21 | TANTALUM CHIP | 4.7uF | 10% | 16V | |
| C106 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C107 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C108 | 1-163-035-00 | CERAMIC CHIP | 0.047uF | | 50V |
| C109 | 1-163-011-11 | CERAMIC CHIP | 0.0015uF | 10% | 50V |
| C110 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C111 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C112 | 1-163-038-00 | CERAMIC CHIP | 0.1uF | | 25V |
| C113 | 1-163-038-00 | CERAMIC CHIP | 0.1uF | | 25V |
| C123 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C124 | 1-164-005-11 | CERAMIC CHIP | 0.47uF | | 25V |
| C151 | 1-163-007-11 | CERAMIC CHIP | 680PF | 10% | 50V |
| C152 | 1-163-007-11 | CERAMIC CHIP | 680PF | 10% | 50V |
| C153 | 1-163-038-00 | CERAMIC CHIP | 0.1uF | | 25V |
| C154 | 1-164-336-11 | CERAMIC CHIP | 0.33uF | | 25V |
| C155 | 1-163-007-11 | CERAMIC CHIP | 680PF | 10% | 50V |
| C156 | 1-163-007-11 | CERAMIC CHIP | 680PF | 10% | 50V |
| C157 | 1-163-033-00 | CERAMIC CHIP | 0.022uF | | 50V |
| C158 | 1-163-033-00 | CERAMIC CHIP | 0.022uF | | 50V |
| C159 | 1-163-023-00 | CERAMIC CHIP | 0.015uF | 5% | 50V |
| C160 | 1-163-019-00 | CERAMIC CHIP | 0.0068uF | 10% | 50V |
| C161 | 1-163-038-00 | CERAMIC CHIP | 0.1uF | | 25V |
| | | < CONNECTOR > | | | |
| * CN101 | 1-568-865-11 | SOCKET, CONNECTOR 23P | | | |
| CN102 | 1-568-795-11 | SOCKET, CONNECTOR 12P | | | |
| | | < IC > | | | |
| IC101 | 8-752-351-94 | IC CXD2515Q | | | |
| IC102 | 8-759-071-79 | IC BA6297AFP | | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R102 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R103 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R104 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R105 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R106 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R107 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R108 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R109 | 1-216-121-00 | METAL CHIP | 1M | 5% | 1/10W |
| R110 | 1-216-025-00 | METAL GLAZE | 100 | 5% | 1/10W |
| R112 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R113 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R114 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R117 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R118 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R121 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R122 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R123 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R124 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R125 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R126 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R127 | 1-216-049-00 | METAL GLAZE | 1K | 5% | 1/10W |
| R131 | 1-216-037-00 | METAL CHIP | 330 | 5% | 1/10W |
| R151 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R152 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R153 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R154 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R155 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R156 | 1-216-070-00 | METAL CHIP | 7.5K | 5% | 1/10W |
| R157 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R158 | 1-216-076-00 | METAL CHIP | 13K | 5% | 1/10W |
| R159 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R160 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R161 | 1-216-308-00 | METAL CHIP | 4.7 | 5% | 1/10W |
| R162 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R163 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| | | < SWITCH > | | | |
| S101 | 1-572-085-11 | SWITCH, LEAF (LIMIT) | | | |
| ********** | | | | | |
| * | A-4373-466-A | DISPLAY BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C801 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C802 | 1-162-211-31 | CERAMIC | 33PF | 5% | 50V |
| C803 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C804 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C805 | 1-126-157-11 | ELECT | 10uF | 20% | 16V |
| C806 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C807 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| | | < CONNECTOR > | | | |
| * CN803 | 1-695-821-11 | CONNECTOR, BOARD TO BOARD 12P | | | |
| | | < FILTER > | | | |
| FL801 | 1-517-278-11 | INDICATOR TUBE, FLUORESCENT | | | |
| | | < IC > | | | |
| IC801 | 8-749-010-21 | IC TFMT5400 | | | |
| IC802 | 8-759-337-52 | IC LC75721E | | | |

# DISPLAY FUNCTION HEADPHONE

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| | | < TRANSISTOR > | | | | |
| Q803 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| Q804 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| Q805 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| Q806 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| Q807 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| | | < RESISTOR > | | | | |
| R714 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | F |
| R715 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | F |
| R716 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R717 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R803 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R804 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R805 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R806 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R807 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R808 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R809 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R810 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R811 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R812 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R813 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| | | < SWITCH > | | | | |
| S714 | 1-554-303-21 | SWITCH, TACTILE (DISC 5) | | | | |
| S715 | 1-554-303-21 | SWITCH, TACTILE (DISC 4) | | | | |
| S716 | 1-554-303-21 | SWITCH, TACTILE (DISC 3) | | | | |
| S717 | 1-554-303-21 | SWITCH, TACTILE (DISC 2) | | | | |
| S718 | 1-554-303-21 | SWITCH, TACTILE (DISC 1) | | | | |
| ********** | | | | | | |
| * | 1-655-601-11 | FUNCTION BOARD | | | | |
| | | ********** | | | | |
| | | < CONNECTOR > | | | | |
| CN801 | 1-695-338-11 | PIN, CONNECTOR (PC BOARD) 15P | | | | |
| * CN802 | 1-695-820-11 | CONNECTOR, BOARD TO BOARD 12P | | | | |
| | | < DIODE > | | | | |
| D801 | 8-719-303-02 | DIODE SEL2510C-D (▶) | | | | |
| D802 | 8-719-301-52 | LED SEL2810A-C (❚❚) | | | | |
| | | < TRANSISTOR > | | | | |
| Q801 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| Q802 | 8-729-900-89 | TRANSISTOR | DTC144ES | | | |
| | | < RESISTOR > | | | | |
| R701 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | F |
| R702 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R703 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | F |
| R704 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | F |
| R705 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | F |
| R706 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R707 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R711 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | F |
| R712 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R713 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | F |
| R801 | 1-249-406-11 | CARBON | 120 | 5% | 1/4W | F |
| R802 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | F |
| | | < SWITCH > | | | | |
| S701 | 1-554-303-21 | SWITCH, TACTILE (EX-CHANGE) | | | | |
| S702 | 1-554-303-21 | SWITCH, TACTILE (DISC SKIP) | | | | |
| S703 | 1-554-303-21 | SWITCH, TACTILE (⏏ OPEN/CLOSE) | | | | |
| S704 | 1-554-303-21 | SWITCH, TACTILE (AMS ▶▶) | | | | |
| S705 | 1-554-303-21 | SWITCH, TACTILE (AMS ◀◀) | | | | |
| S706 | 1-554-303-21 | SWITCH, TACTILE (■) | | | | |
| S707 | 1-554-303-21 | SWITCH, TACTILE (❚❚) | | | | |
| S708 | 1-554-303-21 | SWITCH, TACTILE (▶) | | | | |
| S711 | 1-554-303-21 | SWITCH, TACTILE (PROGRAM) | | | | |
| S712 | 1-554-303-21 | SWITCH, TACTILE (SHUFFLE) | | | | |
| S713 | 1-554-303-21 | SWITCH, TACTILE (CONTINUE) | | | | |
| ********** | | | | | | |
| * | 1-655-602-11 | HEADPHONE BOARD | | | | |
| | | ********** | | | | |
| | | < CAPACITOR > | | | | |
| C151 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V | |
| C251 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V | |
| C353 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V | |
| | | < CONNECTOR > | | | | |
| * CN351 | 1-695-374-31 | PIN, CONNECTOR (PC BOARD) 13P | | | | |
| | | < JACK > | | | | |
| J351 | 1-750-162-61 | JACK (LARGE TYPE) (PHONES) | | | | |
| | | < COIL > | | | | |
| L351 | 1-424-122-11 | FILTER, NOISE | | | | |
| L352 | 1-424-122-11 | FILTER, NOISE | | | | |
| L353 | 1-424-122-11 | FILTER, NOISE | | | | |
| | | < RESISTOR > | | | | |
| R155 | 1-249-402-11 | CARBON | 56 | 5% | 1/4W | F |
| R255 | 1-249-402-11 | CARBON | 56 | 5% | 1/4W | F |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < VARIABLE RESISTOR > | | | |
| RV351 | 1-223-857-11 | RES, VAR, CARBON (LINE OUT/PHONE LEVEL) | | | |
| ********** | | | | | |
| * | 1-647-363-11 | LOADING MOTOR BOARD | | | |
| | | ********** | | | |
| | | < MOTOR > | | | |
| M702 | A-4604-834-A | MOTOR ASSY, LOADING | | | |
| | | < ENCODER ROTARY > | | | |
| S701 | 1-466-996-11 | ENCODER, ROTARY | | | |
| ********** | | | | | |
| * | A-4673-463-A | MAIN BOARD, COMPLETE (CA8ES:US, CND) | | | |
| | | ********** | | | |
| * | A-4673-469-A | MAIN BOARD, COMPLETE (CA8ES:AEP) | | | |
| | | ********** | | | |
| * | A-4673-471-A | MAIN BOARD, COMPLETE (CA8ES:E) | | | |
| | | ********** | | | |
| * | A-4673-473-A | MAIN BOARD, COMPLETE (CA9ES) | | | |
| | | ********** | | | |
| | 7-685-871-01 | SCREW +BVTT 3X6 (S) | | | |
| | | < CAPACITOR > | | | |
| C102 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V |
| C103 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C104 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C105 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C106 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C107 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C108 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C109 | 1-107-160-00 | MICA | 36PF | 5% | 500V |
| C110 | 1-107-208-00 | MICA | 18PF | 5% | 500V |
| C111 | 1-130-477-00 | MYLAR | 0.0033uF | 5% | 50V |
| C112 | 1-130-469-00 | MYLAR | 680PF | 5% | 50V |
| C113 | 1-124-994-11 | ELECT | 100uF | 20% | 10V |
| C114 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V |
| C151 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C152 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C153 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C154 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C155 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C156 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C157 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C158 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C159 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C160 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C161 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C162 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |
| C163 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |
| C164 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C165 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C166 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C167 | 1-124-122-11 | ELECT | 100uF | 20% | 50V |
| C168 | 1-124-122-11 | ELECT | 100uF | 20% | 50V |
| C169 | 1-136-173-00 | FILM | 0.47uF | 5% | 50V |
| C202 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V |
| C203 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C204 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C205 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C206 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C207 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C208 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C209 | 1-107-160-00 | MICA | 36PF | 5% | 500V |
| C210 | 1-107-208-00 | MICA | 18PF | 5% | 500V |
| C211 | 1-130-477-00 | MYLAR | 0.0033uF | 5% | 50V |
| C212 | 1-130-469-00 | MYLAR | 680PF | 5% | 50V |
| C213 | 1-124-994-11 | ELECT | 100uF | 20% | 10V |
| C214 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V |
| C251 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C252 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C253 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C254 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C255 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C256 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C257 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C258 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |
| C259 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C260 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C261 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C262 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |
| C263 | 1-124-478-11 | ELECT | 100uF | 20% | 25V |
| C264 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C265 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C266 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C267 | 1-124-122-11 | ELECT | 100uF | 20% | 50V |
| C268 | 1-124-122-11 | ELECT | 100uF | 20% | 50V |
| C269 | 1-136-173-00 | FILM | 0.47uF | 5% | 50V |
| C306 | 1-162-208-31 | CERAMIC | 24PF | 5% | 50V |
| C307 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C308 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C310 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| C311 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| C320 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |

## MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C321 | 1-124-994-11 | ELECT | 100uF | 20% | 10V |
| C322 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C323 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C324 | 1-124-994-11 | ELECT | 100uF | 20% | 10V |
| C325 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C326 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C327 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C350 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C351 | 1-126-012-11 | ELECT | 470uF | 20% | 16V |
| C352 | 1-126-012-11 | ELECT | 470uF | 20% | 16V |
| C401 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C402 | 1-124-604-00 | ELECT | 330uF | 20% | 10V |
| C412 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C413 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C419 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C501 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C502 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C503 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C506 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C507 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C508 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C509 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C510 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C511 | 1-164-159-11 | CAP, CERAMIC | 0.1uF | | 50V |
| C512 | 1-164-159-11 | CAP, CERAMIC | 0.1uF | | 50V |
| C531 | 1-104-905-11 | CAP, DOUBLE LAYERS | 0.22F | | (CA9ES) |
| C532 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (CA9ES) |
| C533 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V (CA9ES) |
| C551 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C552 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C565 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C571 | 1-162-306-11 | CERAMIC | 0.01uF | 20% | 16V |
| C572 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C573 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C601 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C602 | 1-126-937-11 | ELECT | 4700uF | 20% | 16V |
| C603 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C604 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C605 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C606 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C607 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C608 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C609 | 1-124-572-11 | ELECT | 100uF | 20% | 63V |
| C610 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C611 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V (CA9ES) |
| C612 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C613 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C614 | 1-126-023-11 | ELECT | 100uF | 20% | 16V |
| C615 | 1-126-103-11 | ELECT | 470uF | 20% | 16V |
| C616 | 1-126-103-11 | ELECT | 470uF | 20% | 16V |
| C650 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C651 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C652 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C653 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C654 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C655 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C656 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |

< CONNECTOR >

| | | | |
|---|---|---|---|
| CN301 | 1-695-336-31 | PIN, CONNECTOR (PC BOARD) | 13P |
| CN401 | 1-750-640-11 | CONNECTOR, FFC/FPC | 23P |
| CN402 | 1-695-338-11 | PIN, CONNECTOR (PC BOARD) | 15P |
| CN403 | 1-695-366-21 | PIN, CONNECTOR (PC BOARD) | 5P (CA8ES) |
| CN403 | 1-568-852-11 | PIN, CONNECTOR (PC BOARD) | 9P (CA9ES) |
| * CN504 | 1-695-329-31 | PIN, CONNECTOR (PC BOARD) | 6P |
| CN601 | 1-580-230-11 | PIN, CONNECTOR (PC BOARD) | 3P |

< DIODE >

| | | | |
|---|---|---|---|
| D301 | 8-719-987-63 | DIODE | 1N4148M |
| D531 | 8-719-987-63 | DIODE | 1N4148M (CA9ES) |
| D551 | 8-719-109-92 | DIODE | RD6.2ES-B1 |
| D571 | 8-719-987-63 | DIODE | 1N4148M |
| D572 | 8-719-987-63 | DIODE | 1N4148M |
| D573 | 8-719-109-87 | DIODE | RD5.6ES-B |
| D601 | 8-719-210-21 | DIODE | 11EQS04 (CA8ES) |
| D601 | 8-719-200-82 | DIODE | 11ES2 (CA9ES) |
| D602 | 8-719-210-21 | DIODE | 11EQS04 (CA8ES) |
| D602 | 8-719-200-82 | DIODE | 11ES2 (CA9ES) |
| D603 | 8-719-210-21 | DIODE | 11EQS04 (CA8ES) |
| D603 | 8-719-200-82 | DIODE | 11ES2 (CA9ES) |
| D604 | 8-719-210-21 | DIODE | 11EQS04 (CA8ES) |
| D604 | 8-719-200-82 | DIODE | 11ES2 (CA9ES) |
| D605 | 8-719-200-82 | DIODE | 11ES2 |
| D606 | 8-719-110-13 | DIODE | RD9.1ESB2 |
| D607 | 8-719-210-21 | DIODE | 11EQS04 (CA9ES) |
| D608 | 8-719-210-21 | DIODE | 11EQS04 (CA9ES) |
| D609 | 8-719-210-21 | DIODE | 11EQS04 (CA9ES) |
| D610 | 8-719-210-21 | DIODE | 11EQS04 (CA9ES) |
| D611 | 8-719-987-63 | DIODE | 1N4148M |
| D612 | 8-719-109-85 | DIODE | RD5.1ES-B2 |
| D613 | 8-719-200-82 | DIODE | 11ES2 |
| D614 | 8-719-200-82 | DIODE | 11ES2 |

< IC >

| | | | |
|---|---|---|---|
| IC301 | 8-759-287-70 | IC | CXD8505Q |
| IC302 | 8-759-293-17 | IC | CXA8042S |
| IC303 | 8-759-293-17 | IC | CXA8042S |
| IC304 | 8-759-900-72 | IC | NE5532P |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| IC305 | 8-759-900-72 | IC NE5532P | |
| IC306 | 8-759-900-72 | IC NE5532P | |
| IC307 | 8-759-900-72 | IC NE5532P | |
| IC351 | 8-759-167-88 | IC NJM4565D | |
| IC405 | 8-749-921-12 | IC GP1F32T (DIGITAL OUT) | |
| IC501 | 8-752-858-45 | IC CXP84124-026Q | |
| IC531 | 8-759-289-94 | IC LH5160TF (CA9ES) | |
| IC551 | 8-759-330-30 | IC BA6193 | |
| IC561 | 8-759-803-42 | IC LA6500-FA | |
| IC601 | 8-759-330-29 | IC LA5616 | |
| IC603 | 8-759-633-42 | IC M5293L | |
| IC604 | 8-759-231-53 | IC TA7805S (CA8ES) | |
| IC604 | 8-759-604-86 | IC M5F7807 (CA9ES) | |
| IC605 | 8-759-245-79 | IC TA79005S (CA8ES) | |
| IC605 | 8-759-604-90 | IC M5F7907L (CA9ES) | |
| | | < JACK > | |
| J301 | 1-569-443-21 | JACK, PIN 4P (LINE OUT) | |
| J302 | 1-566-213-11 | PIN, CONNECTOR 4P (CONTROL S) | |
| | | < COIL > | |
| L101 | 1-412-473-21 | INDUCTOR 0uH | |
| L102 | 1-412-473-21 | INDUCTOR 0uH | |
| L104 | 1-412-473-21 | INDUCTOR 0uH | |
| L201 | 1-412-473-21 | INDUCTOR 0uH | |
| L202 | 1-412-473-21 | INDUCTOR 0uH | |
| L204 | 1-412-473-21 | INDUCTOR 0uH | |
| L304 | 1-410-503-11 | INDUCTOR 3.3uH | |
| L305 | 1-410-503-11 | INDUCTOR 3.3uH | |
| L403 | 1-410-503-11 | INDUCTOR 3.3uH | |
| L501 | 1-424-122-11 | FILTER, NOISE | |
| L511 | 1-412-423-21 | INDUCTOR 0uH | |
| L512 | 1-412-423-21 | INDUCTOR 0uH | |
| L571 | 1-410-503-11 | INDUCTOR 3.3uH | |
| L572 | 1-410-503-11 | INDUCTOR 3.3uH | |
| | | < TRANSISTOR > | |
| Q101 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | |
| Q102 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | |
| Q201 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | |
| Q202 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | |
| Q301 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q302 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q303 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q504 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q571 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q572 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q573 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q574 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q601 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| | | < RESISTOR > | |
| R101 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R102 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R103 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R104 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R105 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R106 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R107 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R108 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R109 | 1-215-383-00 | METAL 27 1% 1/4W | |
| R110 | 1-215-383-00 | METAL 27 1% 1/4W | |
| R111 | 1-215-407-00 | METAL 270 1% 1/4W | |
| R112 | 1-215-407-00 | METAL 270 1% 1/4W | |
| R113 | 1-215-437-00 | METAL 4.7K 1% 1/4W | |
| R114 | 1-215-437-00 | METAL 4.7K 1% 1/4W | |
| R115 | 1-215-439-00 | METAL 5.6K 1% 1/4W | |
| R116 | 1-215-439-00 | METAL 5.6K 1% 1/4W | |
| R117 | 1-215-422-00 | METAL 1.1K 1% 1/4W | |
| R118 | 1-215-429-00 | METAL 2.2K 1% 1/4W | |
| R119 | 1-215-459-00 | METAL 39K 1% 1/4W | |
| R120 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R121 | 1-215-389-00 | METAL 47 1% 1/4W | |
| R122 | 1-215-481-00 | METAL 330K 1% 1/4W | |
| R123 | 1-215-407-00 | METAL 270 1% 1/4W | |
| R124 | 1-215-403-00 | METAL 180 1% 1/4W | |
| R125 | 1-215-405-00 | METAL 220 1% 1/4W | |
| R126 | 1-249-425-11 | CARBON 4.7K 5% 1/4W F | |
| R127 | 1-249-425-11 | CARBON 4.7K 5% 1/4W F | |
| R128 | 1-249-393-11 | CARBON 10 5% 1/4W F | |
| R129 | 1-249-413-11 | CARBON 470 5% 1/4W F | |
| R151 | 1-249-435-11 | CARBON 33K 5% 1/4W | |
| R152 | 1-249-432-11 | CARBON 18K 5% 1/4W | |
| R153 | 1-249-422-11 | CARBON 2.7K 5% 1/4W F | |
| R154 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R201 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R202 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R203 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R204 | 1-215-409-00 | METAL 330 1% 1/4W | |
| R205 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R206 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R207 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R208 | 1-215-373-31 | METAL 10 1% 1/4W | |
| R209 | 1-215-383-00 | METAL 27 1% 1/4W | |
| R210 | 1-215-383-00 | METAL 27 1% 1/4W | |
| R211 | 1-215-407-00 | METAL 270 1% 1/4W | |
| R212 | 1-215-407-00 | METAL 270 1% 1/4W | |

**MAIN** **SENSOR**

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R213 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W | |
| R214 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W | |
| R215 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W | |
| R216 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W | |
| R217 | 1-215-422-00 | METAL | 1.1K | 1% | 1/4W | |
| R218 | 1-215-429-00 | METAL | 2.2K | 1% | 1/4W | |
| R219 | 1-215-459-00 | METAL | 39K | 1% | 1/4W | |
| R220 | 1-215-373-31 | METAL | 10 | 1% | 1/4W | |
| R221 | 1-215-389-00 | METAL | 47 | 1% | 1/4W | |
| R222 | 1-215-481-00 | METAL | 330K | 1% | 1/4W | |
| R223 | 1-215-407-00 | METAL | 270 | 1% | 1/4W | |
| R224 | 1-215-403-00 | METAL | 180 | 1% | 1/4W | |
| R225 | 1-215-405-00 | METAL | 220 | 1% | 1/4W | |
| R226 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R227 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R228 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | F |
| R229 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | F |
| R251 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | |
| R252 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W | |
| R253 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | F |
| R254 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R301 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R302 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | F |
| R303 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R306 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R307 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R308 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R309 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R310 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R318 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R319 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R320 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | F |
| R326 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R351 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R352 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R501 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R502 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R503 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R504 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R509 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R510 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R511 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R512 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R513 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R514 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F (CA9ES) |
| R522 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | |
| R523 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R524 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R525 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R526 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R531 | 1-249-399-11 | CARBON | 33 | 5% | 1/4W | F (CA9ES) |
| R532 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F (CA9ES) |
| R533 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (CA9ES) |
| R543 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R544 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | F |
| R551 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | F |
| R552 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R553 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | F |
| R554 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | F |
| R555 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R559 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | F |
| R561 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R562 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R563 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R564 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R565 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | F |
| R571 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R572 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R573 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | F |
| R601 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | |
| R602 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R603 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| R604 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | F |
| R701 | 1-215-409-00 | METAL | 330 | 1% | 1/4W | |
| R801 | 1-215-409-00 | METAL | 330 | 1% | 1/4W | |

< SWITCH >

SW601 1-572-675-11 SWITCH, POWER VOLTAGE CHANGE (CA8ES:E)

< TRANSFORMER >

⚠T703 1-424-485-11 FILTER, LINE

< VIBRATOR >

X301 1-579-161-11 VIBRATOR, CRYSTAL (45MHz)
X501 1-579-175-11 VIBRATOR, CERAMIC (10MHz)

**********

* 1-647-362-11 SENSOR BOARD
**********

< CONNECTOR >

CN801 1-573-383-11 PIN, CONNECTOR (PC BOARD) 2P
CN802 1-750-243-11 SOKET, CONNECTOR 6P

< PHOTO INTERRUPTER >

D801 8-749-924-18 PHOTO INTERRUPTER RPI-1391
D802 8-749-924-30 PHOTO REFLECTOR GP2S28

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < RESISTOR > | |
| R801 | 1-249-416-11 | CARBON 820 5% 1/4W | |
| R802 | 1-249-406-11 | CARBON 120 5% 1/4W F | |
| * | 1-647-364-11 | TABLE MOTOR BOARD | |
| | | < MOTOR > | |
| M701 | A-4660-322-A | MOTOR ASSY, ROTARY (TABLE) | |
| | | MISCELLANEOUS | |
| 11 | 1-769-457-11 | WIRE (FLAT TYPE) (13 CORE) | |
| 14 | 1-769-455-11 | WIRE (FLAT TYPE) (9 CORE) (CA9ES) | |
| 14 | 1-769-458-11 | WIRE (FLAT TYPE) (5 CORE) (CA8ES) | |
| 15 | 1-769-456-11 | WIRE (FLAT TYPE) (15 CORE) | |
| 51 | 1-751-052-11 | WIRE (FLAT TYPE) (6 CORE) | |
| ⚠71 | 1-575-651-21 | CORD, POWER (CA8ES:AEP) | |
| ⚠71 | 1-590-926-11 | CORD, POWER (CA8ES:US, CND/CA9ES) | |
| ⚠71 | 1-696-027-11 | CORD, POWER (CA8ES:E) | |
| 72 | 1-569-007-11 | ADAPTER, CONVERSION 2P (CA8ES:E) | |
| 76 | 1-751-052-11 | WIRE (FLAT TYPE) (6 CORE) | |
| 102 | 1-750-243-11 | SOCKET, CONNECTOR 6P | |
| * 119 | 1-452-538-11 | MAGNET | |
| 121 | 1-765-443-11 | WIRE (FLAT TYPE) (23 CORE) | |
| 157 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | |
| ⚠160 | 8-848-144-11 | DEVICE, OPTICAL KSS-240A | |
| M101 | X-4917-523-3 | BASE (OUT SERT) ASSY (SPINDLE MOTOR) | |
| M102 | X-4917-504-1 | MOTOR, ASSY (SLED MOTOR) | |
| S101 | 1-572-085-11 | SWITCH, LEAF (LIMIT) | |
| ⚠T601 | 1-427-859-11 | TRANSFORMER, POWER (CA8ES:US, CND/CA9ES) | |
| ⚠T601 | 1-427-860-11 | TRANSFORMER, POWER (CA8ES:AEP) | |
| ⚠T601 | 1-427-946-11 | TRANSFORMER, POWER (CA8ES:E) | |
| ⚠T602 | 1-427-859-11 | TRANSFORMER, POWER (CA9ES) | |

## HARDWARE LIST

| | | |
|---|---|---|
| #1 | 7-621-255-15 | SCREW +P 2X3 |
| #2 | 7-682-548-09 | SCREW +BVTT 3X8 (S) |
| #3 | 7-682-564-04 | SCREW +P 4X14 |
| #4 | 7-685-134-19 | SCREW +PTPWH 2.6X8 (TYPE2) |
| #5 | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 N-S |
| #6 | 7-685-647-79 | SCREW +BVTP 3X10 TYPE2 N-S |
| #7 | 7-685-648-79 | SCREW (M3X12), TAPPING |
| #8 | 7-685-871-01 | SCREW +BVTT 3X6 (S) |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | ACCESSORIES & PACKING MATERIALS | |
| | 1-465-730-11 | REMOTE COMMANDER (RM-D515) (CA8ES) | |
| | 1-467-670-21 | REMOTE COMMANDER (RM-D645) (CA9ES) | |
| | 1-558-271-11 | CORD, CONNECTION | |
| | 1-590-925-31 | CORD, CONNECTION | |
| | 3-707-584-01 | COVER, BATTERY (for RM-D515) (CA8ES) | |
| | 3-707-584-21 | COVER, BATTERY (for RM-D645) (CA9ES) | |
| | 3-798-765-11 | MANUAL, INSTRUCTIN (ENGLISH, FRENCH, SPANISH, CHINESE) (CA8ES:CND, AEP, E) | |
| | 3-798-765-21 | MANUAL, INSTRUCTION (ENGLISH) (CA8ES:US/CA9ES:US) | |
| | 3-798-765-41 | MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN, PORTURUESE) (CA8ES:AEP) | |
| * | 4-965-971-01 | CUSHION (FRONT) | |
| * | 4-965-972-01 | CUSHION (REAR) | |
| * | 4-973-285-01 | INDIVIDUAL CARTON (CA9ES) | |
| * | 4-973-287-01 | INDIVIDUAL CARTON (CA8ES) | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

English
95B0593-1
Printed in Japan
© 1995. 2

**Sony Corporation**
**Consumer A&V Products Company**
**Home A&V Products Div.**

**9-960-068-11**

**Published by Home A&V Products Div.**
**Quality Engineering Dept.**

# CDP-CA8ES/CA9ES

SONY

# SERVICE MANUAL

*US Model*
*Canadian Model*
*CDP-CA8ES/CA9ES*
*AEP Model*
*E Model*
*CDP-CA8ES*

## SUPPLEMENT-1

File this supplement with the service manual.

**Subject: 1. Parts Changed and Correction**
**2. MAIN Board Modification**
**3. Base Unit Changed (BU-5BD20)**
**4. Electrical Parts List (MAIN and BD Board)**

(ECN-CD500187, CD601038)

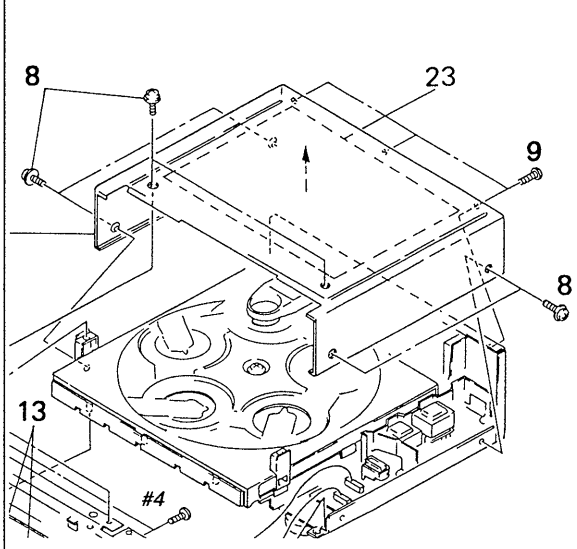
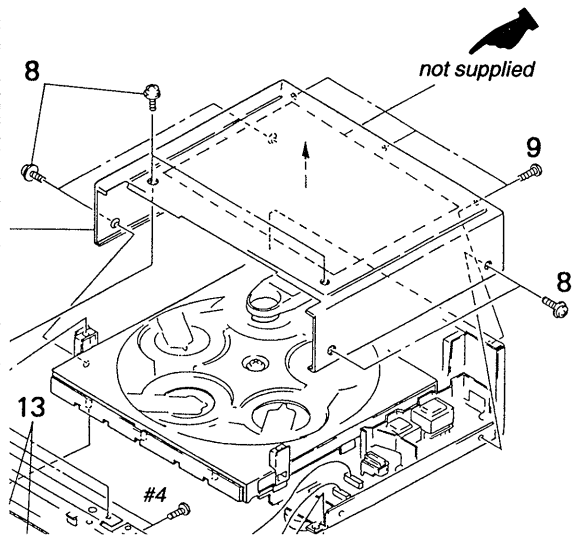
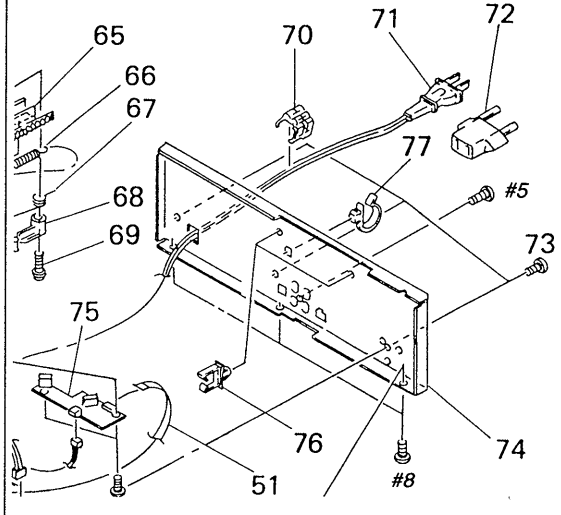
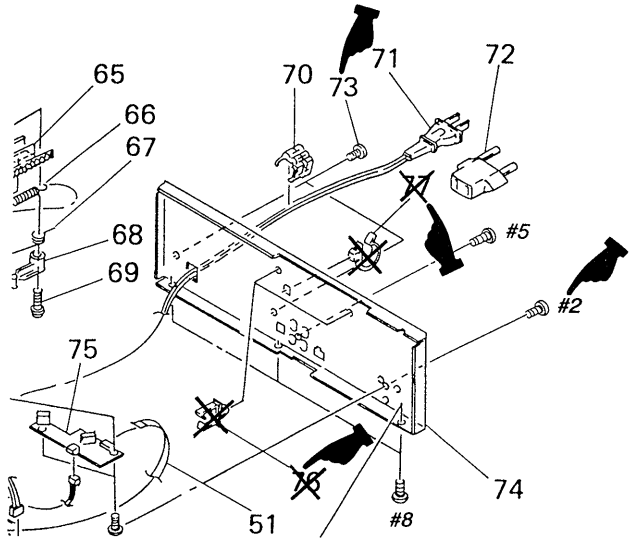
# 1. PARTS CHANGED AND CORRECTION

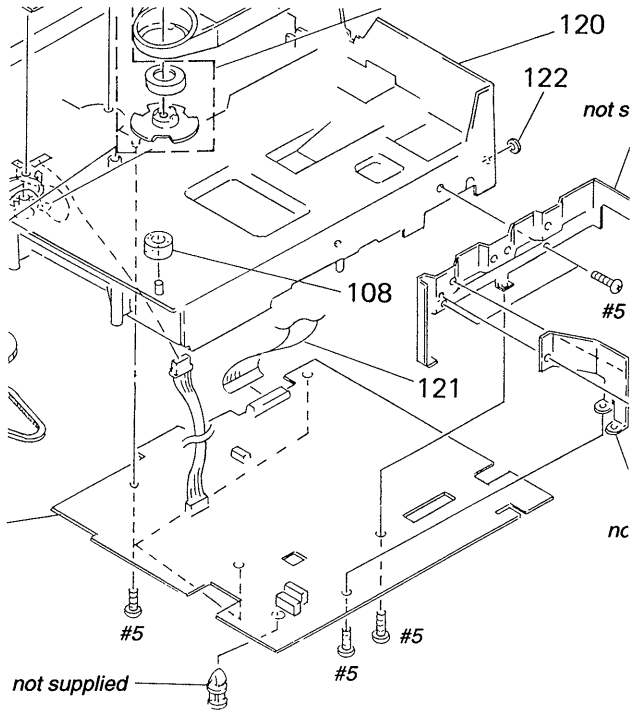
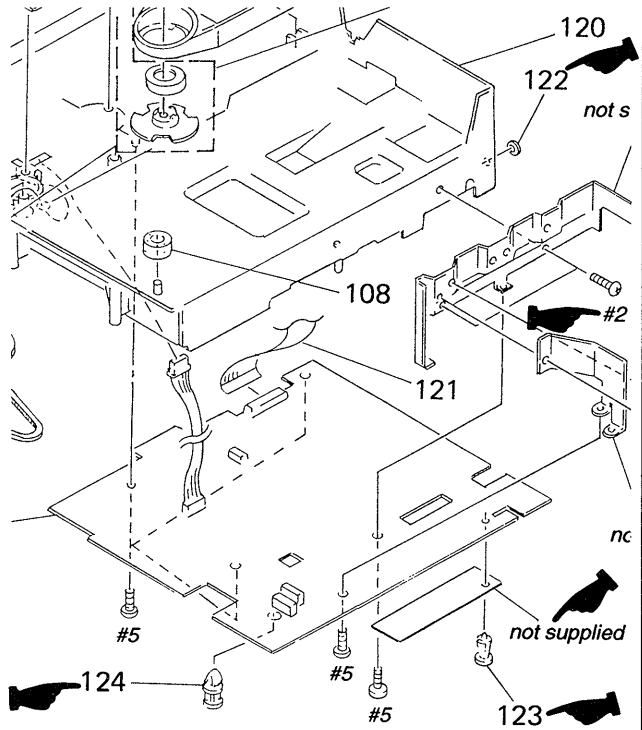
## 1-1. Parts Changed

☛ : indicates changed portion

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

### Exploded Views

<table>
<tr><th>Page</th><th>Former Type</th><th>New Type</th></tr>
<tr><td>34</td><td> 
</td><td> 
</td></tr>
<tr><td></td><td>Ref. No. Part No. Description Remark<br>23 4-974-014-01 REIN FORCEMENT (TOP PLATE)</td><td>Ref. No. Part No. Description Remark</td></tr>
<tr><td>35</td><td> 
</td><td> 
</td></tr>
<tr><td></td><td>Ref. No. Part No. Description Remark<br>* 76 4-974-684-01 CLAMP, WIRE<br>* 77 4-949-235-01 HOOK</td><td>Ref. No. Part No. Description Remark<br>#2 7-685-872-09 SCREW +BVTT 3X8 (S)</td></tr>
</table>

| Page | Former Type | New Type |
|---|---|---|
| 36 |  |  |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 122 | 4-949-302-81 | WASHER | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 122 | 4-975-737-01 | | |
| 123 | 3-511-576-11 | REVET | |
| 124 | 3-682-057-01 | SPACER (SMALL) | |
| #2 | 7-685-872-09 | SCREW +BVTT 3X8 (S) | |

## 1-2. Correction

**☛ : indicates corrected portion**

| Page | INCORRECT | CORRECT |
|---|---|---|
| 34 | Ref. No. Part No. Description Remark<br>* 16 1-665-601-11 FUNCTION BOARD | Ref. No. Part No. Description Remark<br>* 16 1-655-601-11 FUNCTION BOARD |

## 2. MAIN BOARD MODIFICATION

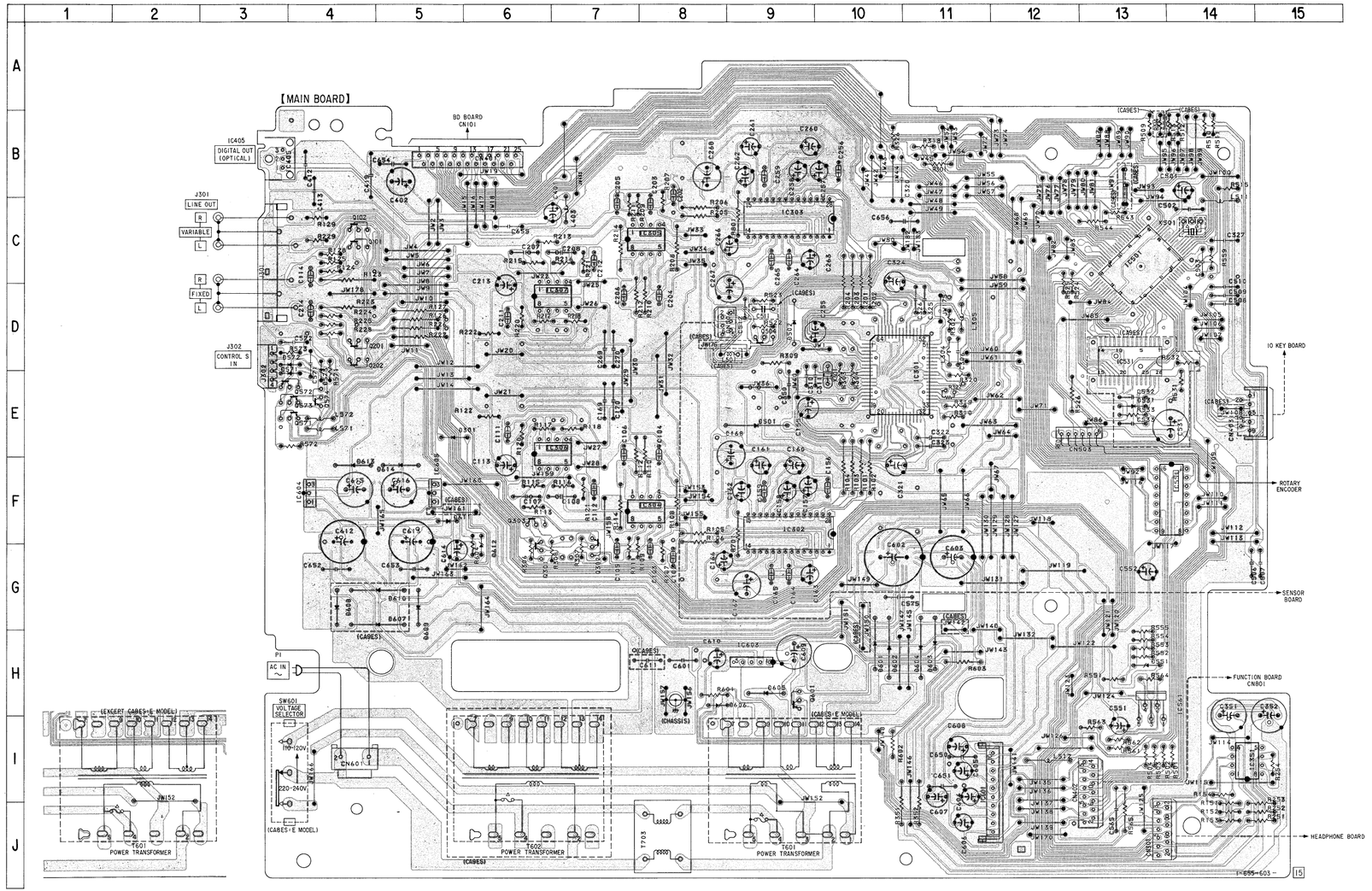
### 2-1. Printed Wiring Board – MAIN Board –

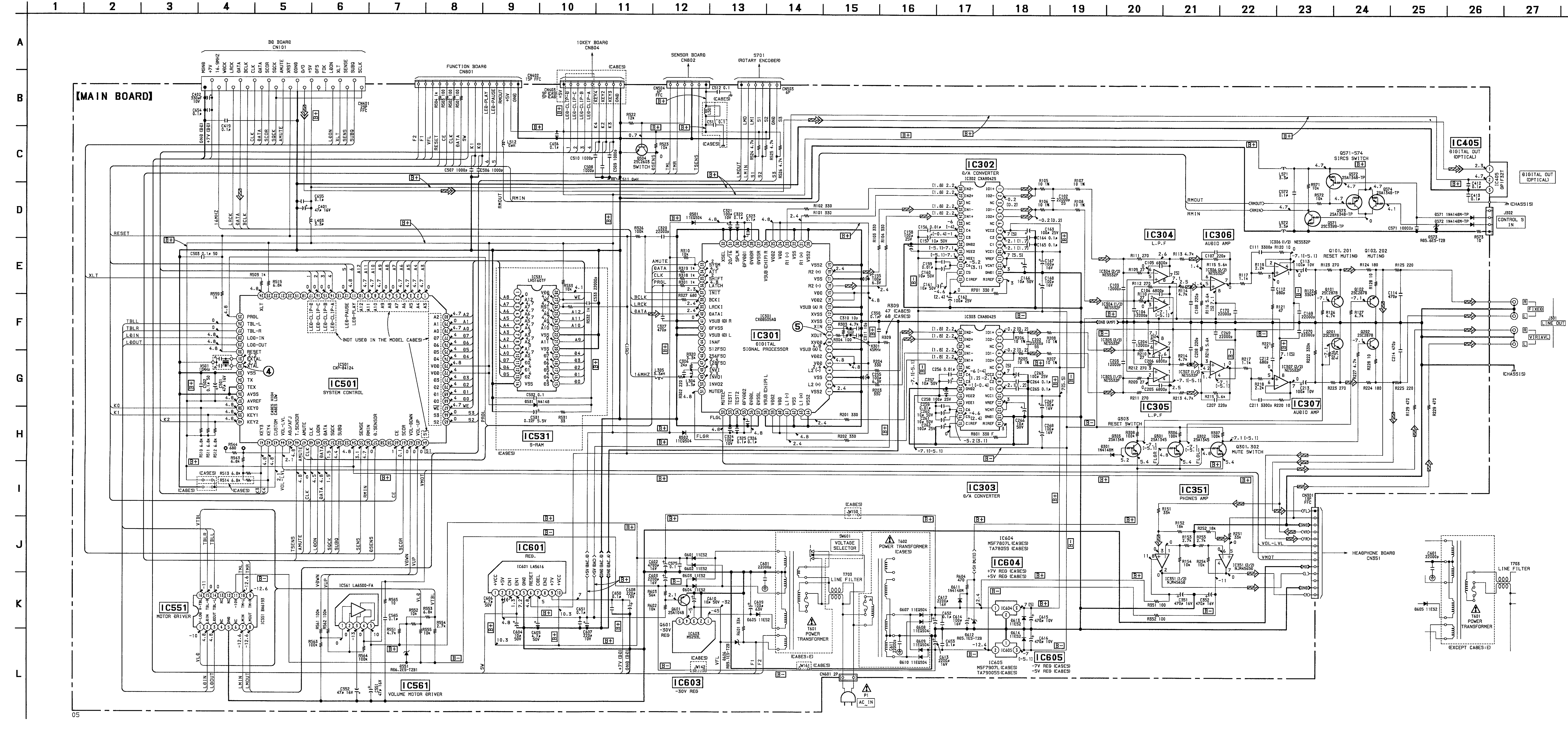
- **Semiconductor Location**

| Ref. No. | Location |
|---|---|
| D301 | E-5 |
| D501 | E-9 |
| D502 | D-9 |
| D531 | E-13 |
| D551 | H-13 |
| D571 | E-4 |
| D572 | D-4 |
| D573 | E-4 |
| D601 | H-10 |
| D602 | H-10 |
| D603 | H-11 |
| D604 | H-11 |
| D605 | H-9 |
| D606 | H-9 |
| D607 | G-5 |
| D608 | G-4 |
| D609 | G-5 |
| D610 | G-5 |
| D611 | F-5 |
| D612 | G-6 |
| D613 | F-4 |
| D614 | F-5 |
| IC301 | E-11 |
| IC302 | F-9 |
| IC303 | F-9 |
| IC304 | F-8 |
| IC305 | C-8 |
| IC306 | E-7 |
| IC307 | D-7 |
| IC351 | I-14 |
| IC405 | B-4 |
| IC501 | C-13 |
| IC531 | I-14 |
| IC551 | F-14 |
| IC561 | H-14 |
| IC601 | I-11 |
| IC603 | H-9 |
| IC604 | F-4 |
| IC605 | F-5 |
| Q101 | C-4 |
| Q102 | C-4 |
| Q201 | D-4 |
| Q202 | D-4 |
| Q301 | G-6 |
| Q302 | G-7 |
| Q303 | F-6 |
| Q504 | D-9 |
| Q571 | E-4 |
| Q572 | E-4 |
| Q573 | E-4 |
| Q574 | E-4 |
| Q601 | H-9 |

**Note on Printed Wiring Board:**

- ○——— : parts extracted from the component side.
- Abbreviation
  CA8ES: CDP-CA8ES
  CA9ES: CDP-CA9ES






## NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ☐ : panel designation.

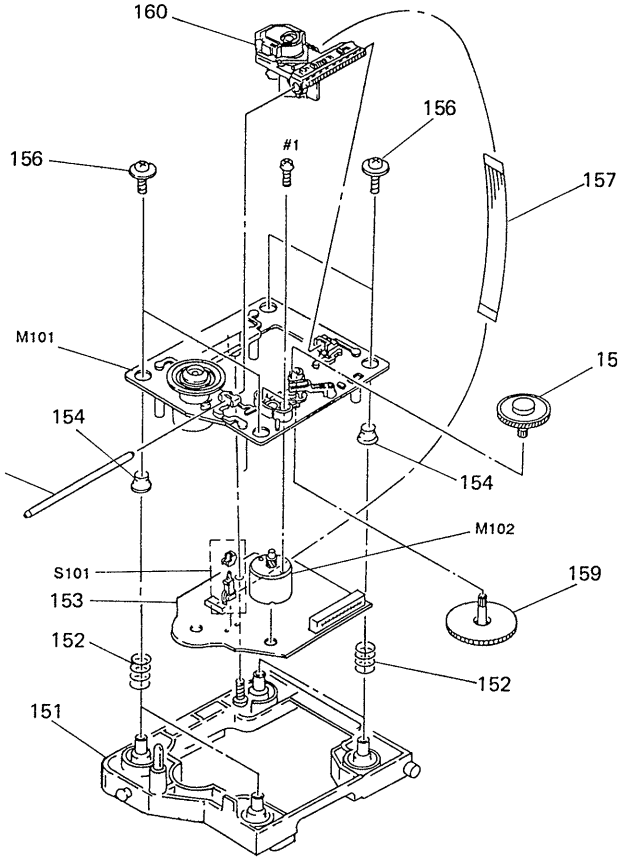
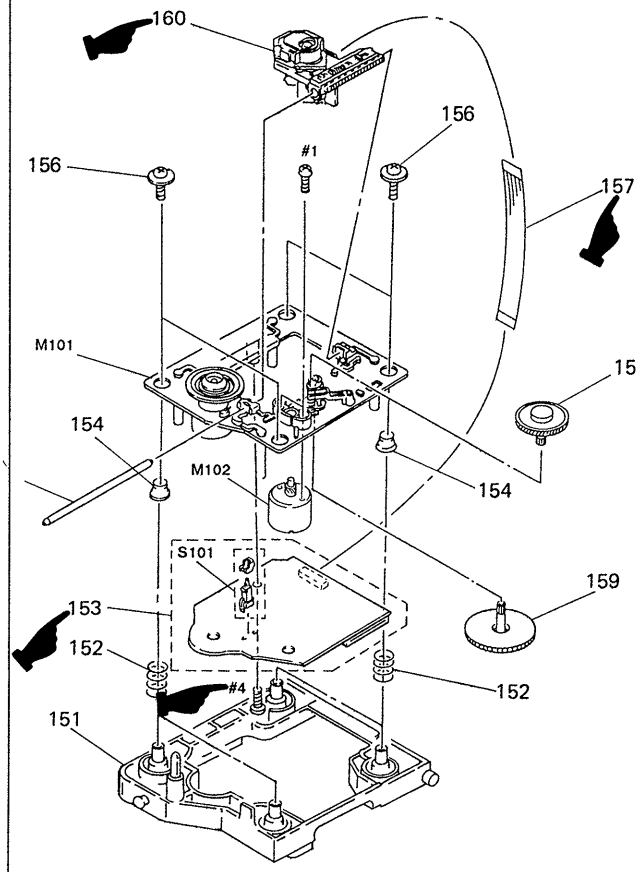
| Note: | Note: |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiès par une marque ⚠ sont critiques pour la sècuritè. Ne les remplacer que par une pièce portant le numèro spècifiè. |

- B+ : B+ Line.
- B– : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: CD (COMMON) [ ]: CD (CDP-CA8ES)
  * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- AC voltage readings in the bias oscillator with a VTVM.
- Abbreviation
  CA8ES : CDP-CA8ES
  CA9ES : CDP-CA9ES
- Signal path.
  ⇨ : CD
  ⇨⟫ : digital out

## 3. BASE UNIT CHANGED (BU-5BD20)

### 3-1. BU-5BD20 Difference Table

☛ : indicates changed and correction portion

| Page | Former Type (BU-5BD10B) | New Type (BU-5BD20) |
|---|---|---|
| 37 |  |  |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 153 | A-4649-432-A | BD BOARD, COMPLETE | |
| 157 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | |
| ⚠160 | 8-848-144-11 | OPTICAL PICK-UP KSS-240A | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 153 | A-4673-509-A | BD BOARD, COMPLETE | |
| 157 | 1-769-069-11 | WIRE, FLAT TYPE (16 CORE) | |
| ⚠160 | 8-848-367-11 | OPTICAL PICK-UP KSS-213B | |
| #4 | 7-685-134-19 | SCREW +PTPWH 2.6X8 (TYPE2) | |

| Page | Ref. No. | Part No. | Description | Remark |
|---|---|---|---|---|
| 45 | | | MISCELLANEOUS<br>********** | |
| | 157 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | |
| | ⚠160 | 8-848-144-11 | OPTICAL PICK-UP KSS-240A | |

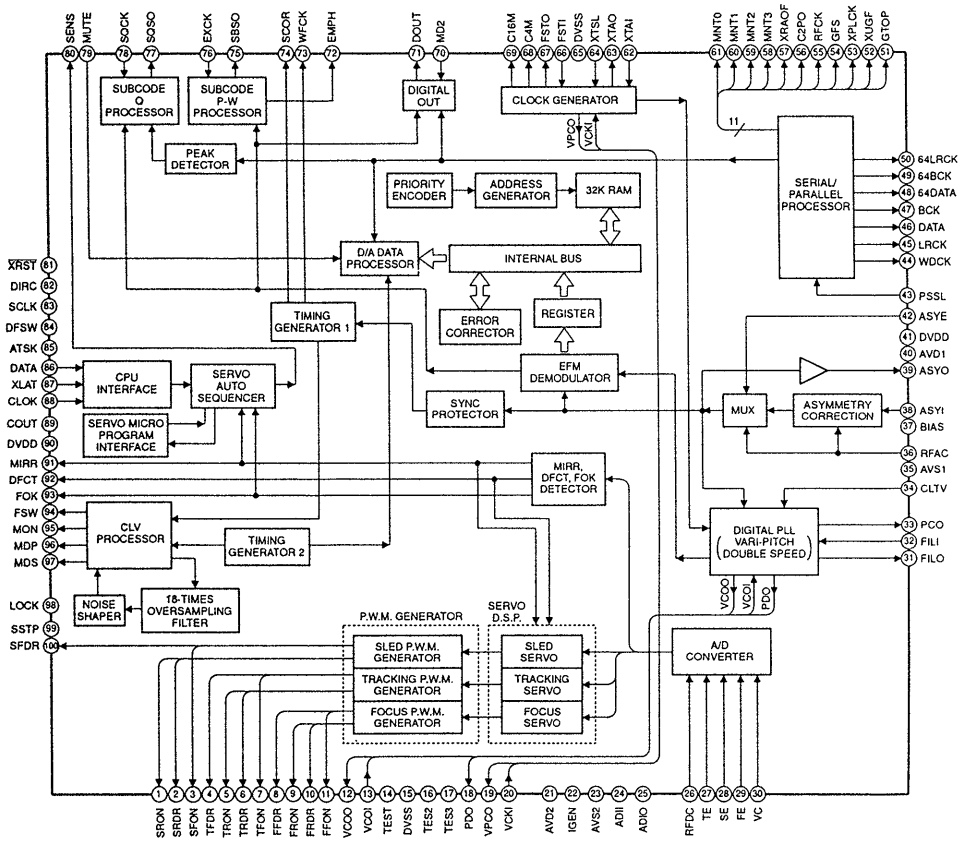
| Page | Ref. No. | Part No. | Description | Remark |
|---|---|---|---|---|
| 45 | | | MISCELLANEOUS<br>********** | |
| | 157 | 1-769-069-11 | WIRE, FLAT TYPE (16 CORE) | |
| | ⚠160 | 8-848-367-11 | OPTICAL PICK-UP KSS-213B | |

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

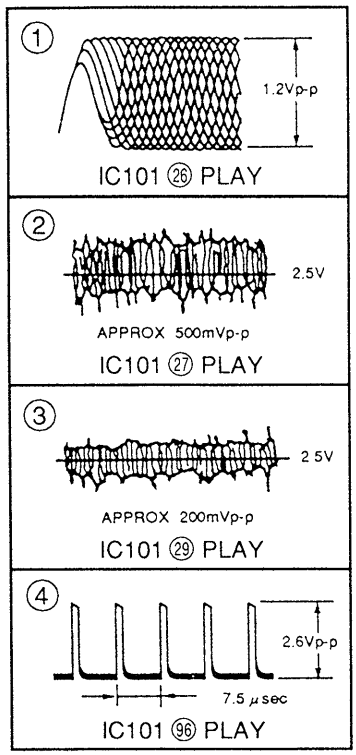
| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.<br>Ne les remplacer que par une pièce portant le neméro spécifié. |

## • IC Block Diagrams

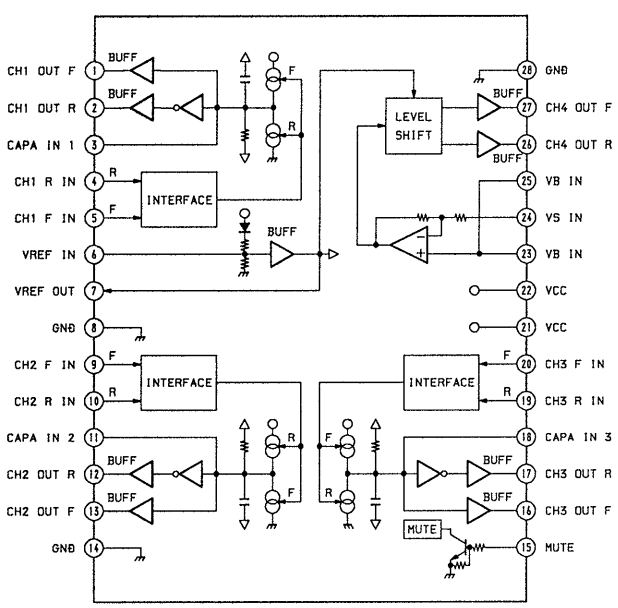
### IC101 CXD2515Q



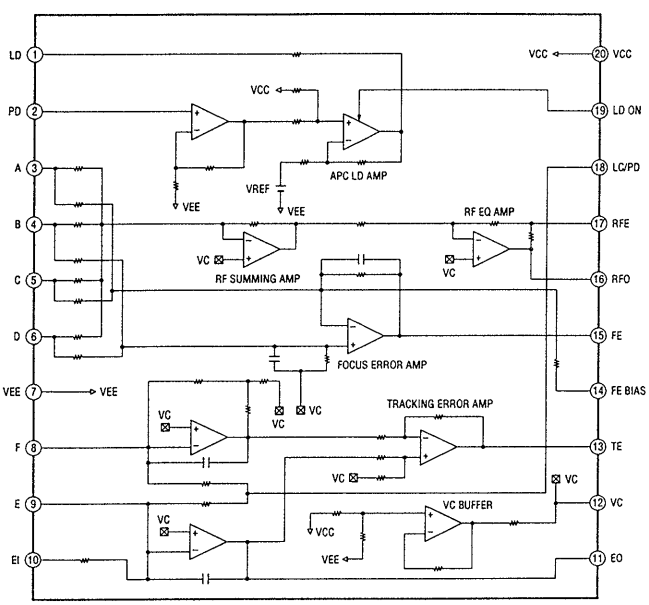

### • Waveforms



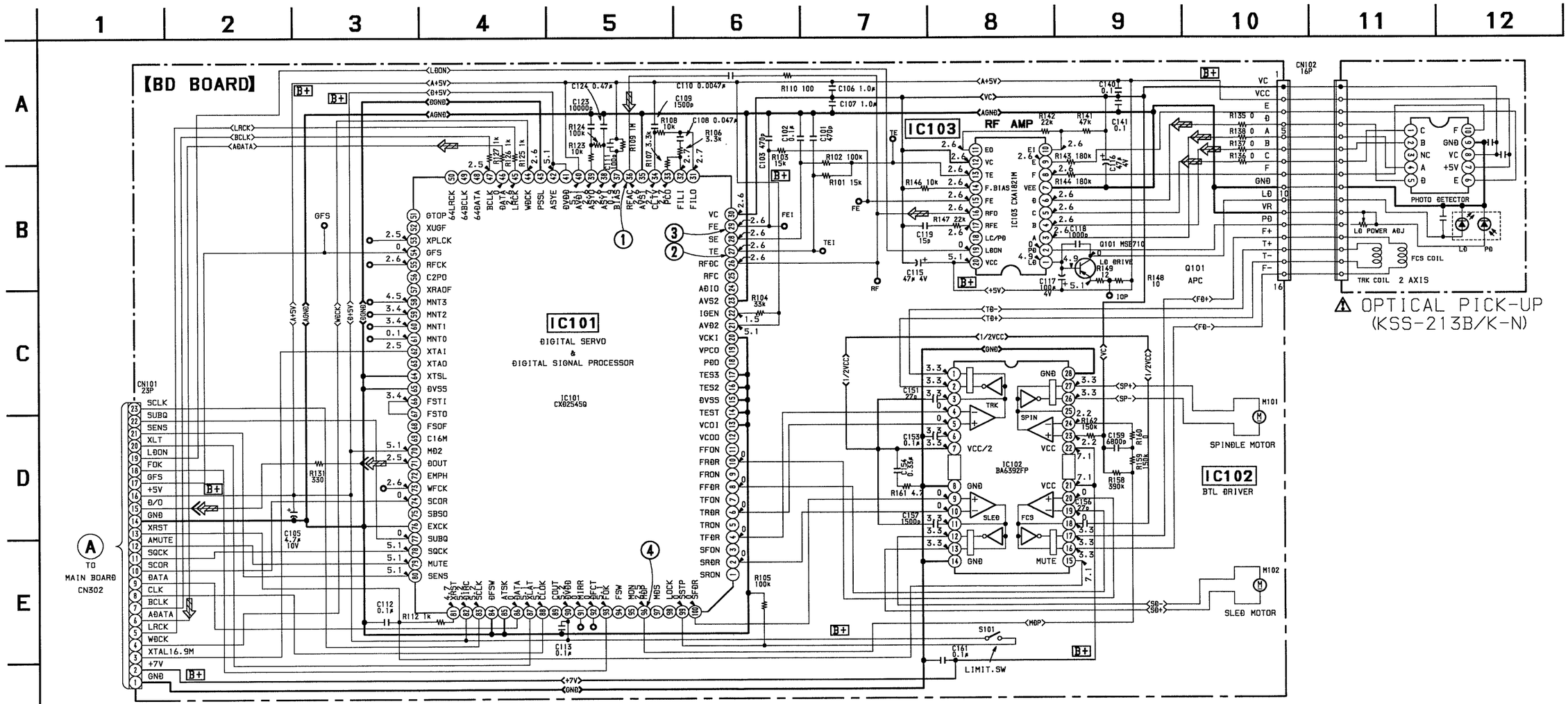

### IC102 BA6392FP




### IC103 CXA1821M



## 3-2. Schemaitc Diagram – BD Board –



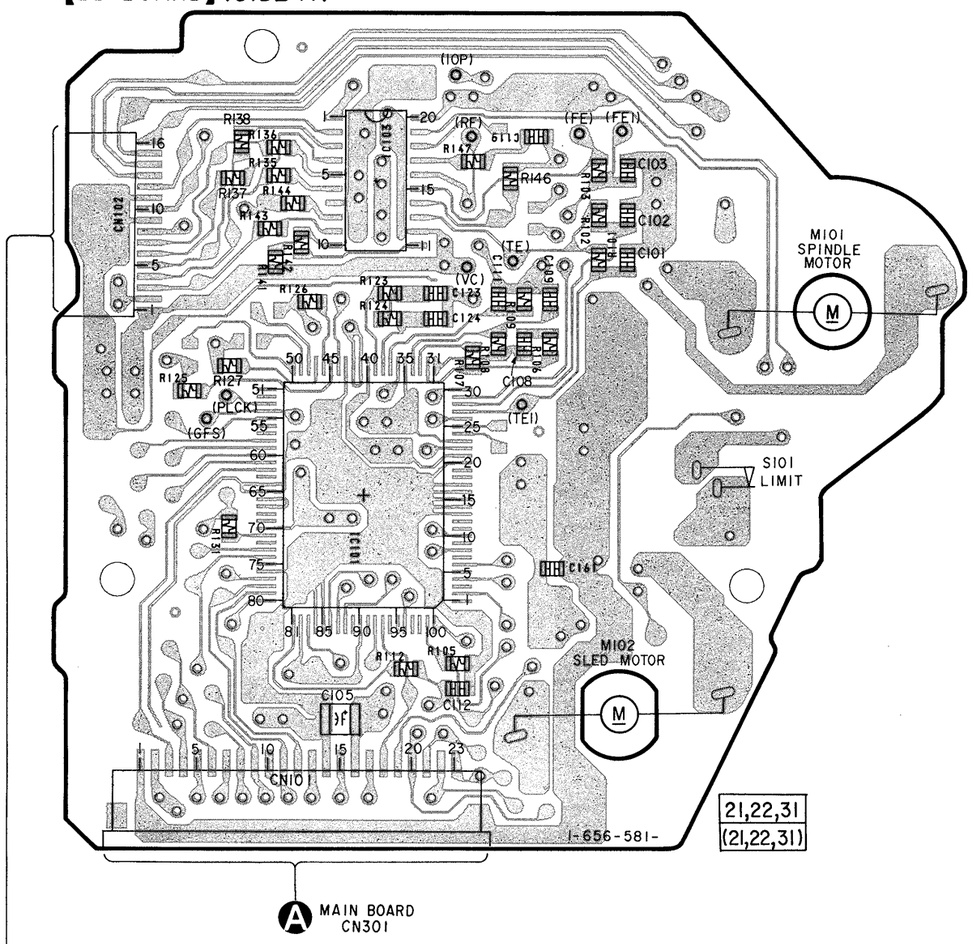

**NOTE**

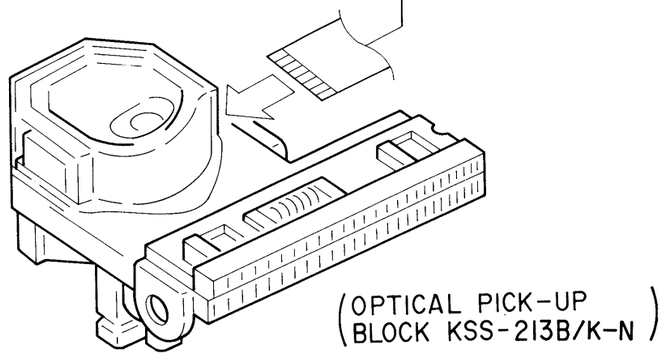
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

| | |
|---|---|
| Note:<br>The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Note:<br>Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

- B+ :B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
- Voltages are taken with a VOM (Input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ :CÐ
  ⇨ :digital out

【BD BOARD】(SIDE A)

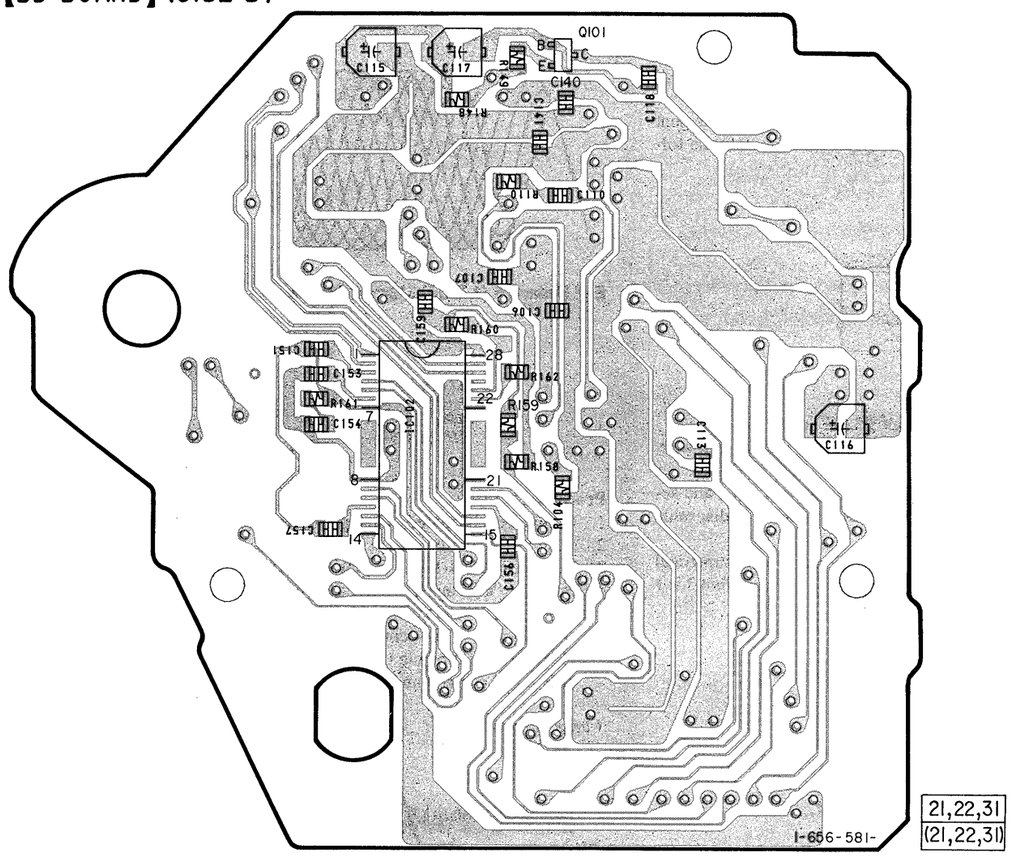


(OPTICAL PICK-UP
BLOCK KSS-213B/K-N)

09

【BD BOARD】(SIDE B)




- **Semiconductor Location**

| Ref. No. | Location |
|---|---|
| IC101 | C-2 |
| IC102 | C-7 |
| IC103 | B-2 |
| Q101 | A-8 |

**Note:**

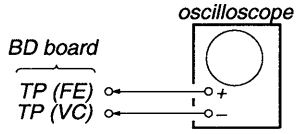
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

### 3-4. Electrical Block Checking (for BU-5BD20)

**Note:**

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10 MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

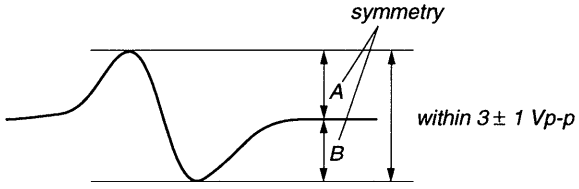
### S-Curve Check




**Procedure:**

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turn Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check if the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3 ± 1 Vp-p.

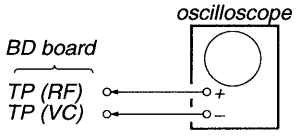
*S-curve waveform*




6. After check, remove the lead wire connected in step 2.

**Note:** • Try to measure several times to make sure than the ratio of A:B or B:A is more than 10:7.
• Set sweep time as long as possible and set the brightness to obtain best waveform.

### RF Level Check

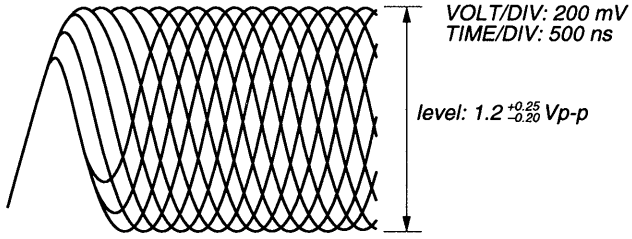



**Procedure:**

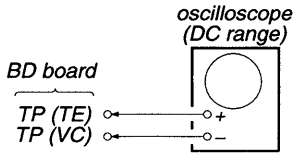
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

**Note:** A clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

*RF signal waveform*



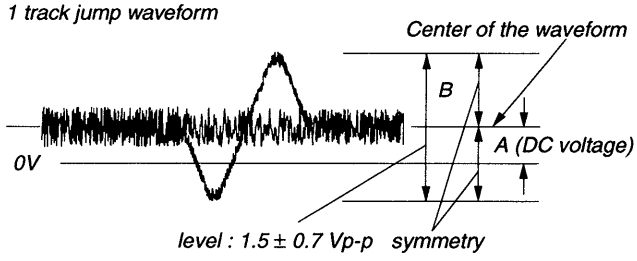

### E-F Balance (1 Track Jump) Check




**Procedure:**

1. Connect oscilloscope to test point TP (TE) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "▮▮ (Pause)" button. (Becomes the 1 track jump mode)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Travers waveform.
   Confirm the following :
   A/B × 100 = less than ± 20 %

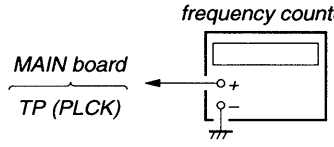
*1 track jump waveform*




### RF PLL Free-run Frequency Check

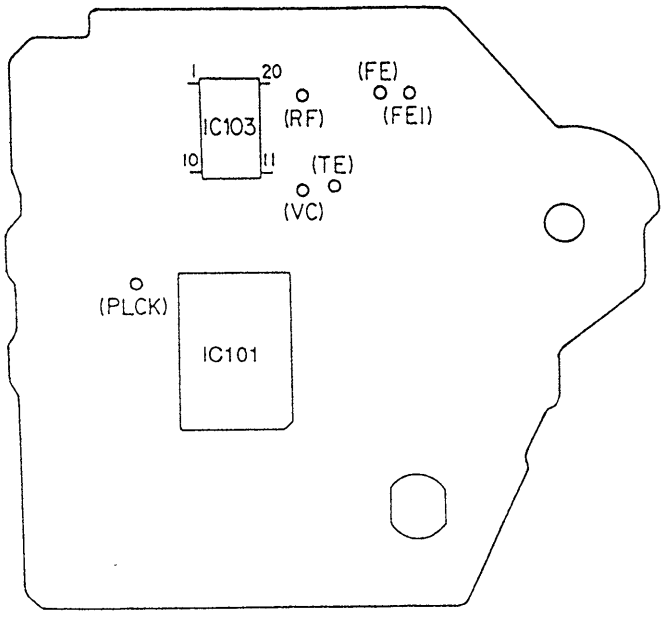
**Procedure:**

1. Connect frequency counter to test point (PCLK) with lead wire.




2. Turn the Power switch on.
3. Confirm that reading on frquency counter is 4.3218 MHz.

**[BD BOARD]** — Conductor Side —



### 3-5. IC Pin Function Description

**BD BOARD IC101 CXD2545Q (DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR)**

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 1 | SRON | O | Sled drive output (Not used) |
| 2 | SRDR | O | Sled drive output |
| 3 | SFON | O | Sled drive output (Not used) |
| 4 | TFDR | O | Tracking drive output |
| 5 | TRON | O | Tracking drive output (Not used) |
| 6 | TRDR | O | Tracking drive output |
| 7 | TFON | O | Tracking drive output (Not used) |
| 8 | FFDR | O | Focus drive output |
| 9 | FRON | O | Focus drive output (Not used) |
| 10 | FRDR | O | Focus drive output |
| 11 | FFON | O | Focus drive output (Not used) |
| 12 | VCOO | O | VCO output for analog EFM PLL (Not used) |
| 13 | VCOI | I | VCO input for analog EFM PLL (Ground) |
| 14 | TEST | I | TEST pin connected normally to Ground |
| 15 | DVSS | — | Digital Ground |
| 16 | TES2 | I | TEST pin connected normally to Ground |
| 17 | TES3 | I | TEST pin connected normally to Ground |
| 18 | PDO | O | Charge-pump output for analog EFM PLL (Not used) |
| 19 | VPCO | O | Charge-pump output for variable pitch PLL (Not used) |
| 20 | VCKI | I | Clock input from variable pitch external VCO (Ground) |
| 21 | AVD2 | — | Analog power supply |
| 22 | IGEN | I | Power supply pin for operational amplifiers |
| 23 | AVS2 | — | Analog Ground |
| 24 | ADIO | I | (Not used) |
| 25 | RFC | O | (Not used) |
| 26 | RFDC | I | RF signal input |
| 27 | TE | I | Tracking error signal input |
| 28 | SE | I | Sled error signal input |
| 29 | FE | I | Focus error signal input |
| 30 | VC | I | Center voltage input pin |
| 31 | FILO | O | Filter output for master PLL |
| 32 | FILI | I | Filter input for master PLL |
| 33 | PCO | O | Charge-pump output for master PLL |
| 34 | CLTV | I | Control voltage input for master VCO |
| 35 | AVSI | — | Analog Ground |
| 36 | RFAC | I | EFM signal input |
| 37 | BIAS | I | Asymmetry circuit constant current input |
| 38 | ASYI | I | Asymmetry comparate voltage input |
| 39 | ASYO | O | EFM full swing output |
| 40 | AVD1 | — | Analog power supply |

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 41 | DVDD | — | Digtal power supply |
| 42 | ASYE | I | Asymmetry circuit ON/OFF |
| 43 | PSSL | I | Audio data output mode selection input |
| 44 | WDCK | O | 48-bit slot D/A interface Word clock |
| 45 | LRCK | O | 48-bit slot D/A interface LR clock |
| 46 | DATA | O | DA 16 output when PSSL=1 48-bit slot serial data when PSSL=0 |
| 47 | BCLK | O | DA 15 output when PSSL=1 48-bit slot data when PSSL=0 |
| 48 | 64DATA | O | DA 14 output when PSSL=1 64-bit slot data when PSSL=0 (Not used) |
| 49 | 64BCLK | O | DA 13 output when PSSL=1 64-bit slot data when PSSL=0 (Not used) |
| 50 | 64LRCK | O | DA 12 output when PSSL=1 64-bit slot data when PSSL=0 (Not used) |
| 51 | GTOP | O | DA 11 output when PSSL=1 GTOP output when PSSL=0 (Not used) |
| 52 | XUGF | O | DA 10 output when PSSL=1 XUGF output when PSSL=0 (Not used) |
| 53 | XPLCK | O | DA 09 output when PSSL=1 XPLCK output when PSSL=0 |
| 54 | GFS | O | DA 08 output when PSSL=1 GFS output when PSSL=0 |
| 55 | PFCK | O | DA 07 output when PSSL=1 PFCK output when PSSL=0 |
| 56 | C2PO | O | DA 06 output when PSSL=1 C2PO output when PSSL=0 (Not used) |
| 57 | XRAOF | O | DA 05 output when PSSL=1 XRAOF output when PSSL=0 |
| 58 | MNT3 | O | DA 04 output when PSSL=1 MNT3 output when PSSL=0 |
| 59 | MNT2 | O | DA 03 output when PSSL=1 MNT2 output when PSSL=0 |
| 60 | MNT1 | O | DA 02 output when PSSL=1 MNT1 output when PSSL=0 |
| 61 | MNT0 | O | DA 01 output when PSSL=1 MNT0 output when PSSL=0 |
| 62 | XTAI | I | X'tal oscillator circuit input |
| 63 | XTAO | O | X'tal oscillator circuit output (Not used) |
| 64 | XTSL | I | X'tal selection input pin (Not used) |
| 65 | DVSS | — | Digital Ground |
| 66 | FSTI | I | 2/3 divider input of pins 62, 63 |
| 67 | FSTO | O | 2/3 divider output of pins 62, 63 |
| 68 | FSOF | O | (Not used) |
| 69 | C16M | O | 16.9344 MHz output (Not used) |
| 70 | MD2 | I | Digital-out ON/OFF control pin (+5 V) |
| 71 | DOUT | O | Digital-out output pin |
| 72 | EMPH | O | Playback disc output in emphasis mode (Not used) |
| 73 | WFCK | O | WFCK output |
| 74 | SCOR | O | Sub-code sync output |
| 75 | SBSO | O | Sub-P though Sub-W serial output (Not used) |
| 76 | EXCK | I | Clock input for SBSO read-out (Ground) |
| 77 | SUBQ | O | Sub-Q 80-bit output |
| 78 | SQCK | I | Clock input for SQSO read-out |
| 79 | MUTE | I | Muting selection pin |
| 80 | SENS | O | SENS output |

| Pin No. | Pin Name | I/O | Function |
|---|---|---|---|
| 81 | XRST | I | System reset |
| 82 | DIRC | I | Used in 1-track jump mode (+5 V) |
| 83 | SCLK | I | SENS serial data read-out clock |
| 84 | DFSW | I | DFCT selection pin (Ground) |
| 85 | ATSK | I | Input pin for anti-shock (Ground) |
| 86 | DATA | I | Serial data input, supplied from CPU |
| 87 | XLAT | I | Latch input, supplied from CPU |
| 88 | CLOK | I | Serial data transfer clock input, supllied from CPU |
| 89 | COUT | O | Numbers of track counted signal output (Not used) |
| 90 | DVDD | — | Digital power supply |
| 91 | MIRR | O | Mirror signal output |
| 92 | DFCT | O | Defect signal output |
| 93 | FOK | O | Focus OK output |
| 94 | FSW | O | Output to select spindle motor output filter (Not used) |
| 95 | MON | O | Output to control ON/OFF of spindle motor (Not used) |
| 96 | MDP | O | Output to control spindle motor servo |
| 97 | MDS | O | Output to control spindle motor servo (Not used) |
| 98 | LOCK | O | GFS is sampled by 460 Hz H when GFS is H (Not used) |
| 99 | SSTP | I | Input signal to detect disc inner most track |
| 100 | SFDR | O | Slde drive output |

**BD**

## 4. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:$\mu$, for example:
  uA ..: $\mu$A.. uPA..: $\mu$PA..
  uPB..: $\mu$PB.. uPC..: $\mu$PC.. uPD..: $\mu$PD..
- CAPACITORS
  uF: $\mu$F
- COILS
  uH: $\mu$H

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-4673-509-A | BD BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C101 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C102 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C103 | 1-163-005-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C105 | 1-135-155-21 | TANTALUM CHIP | 4.7uF | 10% | 16V |
| C106 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C107 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C108 | 1-163-035-00 | CERAMIC CHIP | 0.047uF | | 50V |
| C109 | 1-163-145-00 | CERAMIC CHIP | 0.0015uF | 5% | 50V |
| C110 | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% | 50V |
| C111 | 1-163-251-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C112 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C113 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C115 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C116 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C117 | 1-126-209-11 | ELECT | 100uF | 20% | 4V |
| C118 | 1-163-275-11 | CERAMIC CHIP | 0.001uF | 5% | 50V |
| C119 | 1-163-231-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C123 | 1-164-232-11 | CERAMIC CHIP | 0.01uF | | 50V |
| C124 | 1-164-005-11 | CERAMIC CHIP | 0.47uF | | 25V |
| C140 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C141 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C151 | 1-163-237-11 | CERAMIC CHIP | 27PF | 5% | 50V |
| C153 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| C154 | 1-164-336-11 | CERAMIC CHIP | 0.33uF | | 25V |
| C156 | 1-163-237-11 | CERAMIC CHIP | 27PF | 5% | 50V |
| C157 | 1-163-145-00 | CERAMIC CHIP | 0.0015uF | 5% | 50V |
| C159 | 1-163-019-00 | CERAMIC CHIP | 0.0068uF | 10% | 50V |
| C161 | 1-163-038-91 | CERAMIC CHIP | 0.1uF | | 25V |
| | | < CONNECTOR > | | | |
| CN101 | 1-770-072-11 | CONNECTOR, (LIF(NON-ZIF))FFC23P | | | |
| CN102 | 1-770-014-11 | CONNECTOR, FFC/FPC 16P | | | |
| | | < IC > | | | |
| IC101 | 8-752-369-78 | IC CXD2545Q | | | |
| IC102 | 8-759-176-09 | IC BA6392FP | | | |
| IC103 | 8-752-072-45 | IC CXA1821M-T6 | | | |
| | | < TRANSISTOR > | | | |
| Q101 | 8-729-010-08 | TRANSISTOR MSB710-R | | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R102 | 1-216-097-91 | METAL GLAZE | 100K | 5% | 1/10W |
| R103 | 1-216-077-00 | METAL CHIP | 15K | 5% | 1/10W |
| R104 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R105 | 1-216-097-91 | METAL GLAZE | 100K | 5% | 1/10W |
| R106 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R107 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R108 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R109 | 1-216-121-91 | METAL GLAZE | 1M | 5% | 1/10W |
| R110 | 1-216-025-91 | METAL GLAZE | 100 | 5% | 1/10W |
| R112 | 1-216-049-91 | METAL GLAZE | 1K | 5% | 1/10W |
| R123 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R124 | 1-216-097-91 | METAL GLAZE | 100K | 5% | 1/10W |
| R125 | 1-216-049-91 | METAL GLAZE | 1K | 5% | 1/10W |
| R126 | 1-216-049-91 | METAL GLAZE | 1K | 5% | 1/10W |
| R127 | 1-216-049-91 | METAL GLAZE | 1K | 5% | 1/10W |
| R131 | 1-216-037-00 | METAL CHIP | 330 | 5% | 1/10W |
| R135 | 1-216-295-91 | CONDUCTOR, CHIP | | | (2012) |
| R136 | 1-216-295-91 | CONDUCTOR, CHIP | | | (2012) |
| R137 | 1-216-295-91 | CONDUCTOR, CHIP | | | (2012) |
| R138 | 1-216-295-91 | CONDUCTOR, CHIP | | | (2012) |
| R141 | 1-216-089-91 | METAL GLAZE | 47K | 5% | 1/10W |
| R142 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R143 | 1-216-103-00 | METAL CHIP | 180K | 5% | 1/10W |
| R144 | 1-216-103-00 | METAL CHIP | 180K | 5% | 1/10W |
| R146 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R147 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R148 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R149 | 1-216-003-11 | METAL GLAZE | 12 | 5% | 1/10W |
| R158 | 1-216-111-91 | METAL GLAZE | 390K | 5% | 1/10W |
| R159 | 1-216-101-00 | METAL CHIP | 150K | 5% | 1/10W |
| R160 | 1-216-295-91 | CONDUCTOR, CHIP | (2012) | | |
| R161 | 1-216-308-00 | METAL CHIP | 4.7 | 5% | 1/10W |
| R162 | 1-216-101-00 | METAL CHIP | 150K | 5% | 1/10W |
| | | < SWITCH > | | | |
| S101 | 1-572-085-11 | SWITCH, LEAF (LIMIT) | | | |
| ********** | | | | | |
| * | A-4673-463-A | MAIN BOARD, COMPLETE (CA8ES:US/CND) | | | |
| * | A-4673-469-A | MAIN BOARD, COMPLETE (CA8ES:AEP) | | | |
| * | A-4673-471-A | MAIN BOARD, COMPLETE (CA8ES:E) | | | |
| * | A-4673-473-A | MAIN BOARD, COMPLETE (CA9ES) | | | |
| | | ********** | | | |
| | 7-685-871-01 | SCREW +BVTT 3X6 (S) | | | |
| | | < CAPACITOR > | | | |
| C102 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V |
| C103 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C104 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C105 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C106 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C107 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C108 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C111 | 1-130-477-00 | MYLAR | 0.0033uF | 5% | 50V |
| C112 | 1-130-469-00 | MYLAR | 680PF | 5% | 50V |
| C113 | 1-126-052-11 | ELECT | 100uF | 20% | 10V |
| C114 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V |
| C155 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C156 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C157 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C158 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C159 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C160 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C161 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C162 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C163 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C164 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C165 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C166 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C167 | 1-126-052-11 | ELECT | 100uF | 20% | 16V |
| C168 | 1-126-052-11 | ELECT | 100uF | 20% | 16V |
| C169 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C170 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C202 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C203 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C204 | 1-130-484-00 | MYLAR | 0.012uF | 5% | 50V |
| C205 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C206 | 1-106-363-00 | MYLAR | 6800PF | 5% | 200V |
| C207 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C208 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C211 | 1-130-477-00 | MYLAR | 0.0033uF | 5% | 50V |
| C212 | 1-130-469-00 | MYLAR | 680PF | 5% | 50V |
| C213 | 1-126-052-11 | ELECT | 100uF | 20% | 10V |
| C214 | 1-130-467-00 | MYLAR | 470PF | 5% | 50V |
| C255 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C256 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C257 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C258 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C259 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C260 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C261 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C262 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C263 | 1-126-023-11 | ELECT | 100uF | 20% | 25V |
| C264 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C265 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C266 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C267 | 1-126-052-11 | ELECT | 100uF | 20% | 16V |
| C268 | 1-126-052-11 | ELECT | 100uF | 20% | 16V |
| C269 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C270 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C306 | 1-162-208-31 | CERAMIC | 24PF | 5% | 50V |
| C310 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| C311 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V |
| C320 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C321 | 1-126-052-11 | ELECT | 100uF | 20% | 10V |
| C322 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C323 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C324 | 1-126-052-11 | ELECT | 100uF | 20% | 10V |
| C325 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C326 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C327 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C350 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C351 | 1-126-012-11 | ELECT | 470uF | 20% | 16V |
| C352 | 1-126-012-11 | ELECT | 470uF | 20% | 16V |
| C401 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C402 | 1-128-222-11 | ELECT | 330uF | 20% | 10V |
| C412 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C413 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C419 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C501 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C502 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C503 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |

## MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C506 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C507 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C508 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C509 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C510 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C511 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (CA9ES) |
| C512 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C531 | 1-104-905-11 | CAPACITOR | 0.22F | | 5.5V (CA9ES) |
| C532 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (CA9ES) |
| C533 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V (CA9ES) |
| C551 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C552 | 1-126-022-11 | ELECT | 47uF | 20% | 16V |
| C565 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C571 | 1-162-306-11 | CERAMIC | 0.01uF | 20% | 16V |
| C572 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C575 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C601 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C602 | 1-126-937-11 | ELECT | 4700uF | 20% | 16V |
| C603 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C604 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C605 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C606 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C607 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C608 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C609 | 1-126-063-11 | ELECT | 100uF | 20% | 63V |
| C610 | 1-126-059-11 | ELECT | 10uF | 20% | 50V |
| C611 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V (CA9ES) |
| C612 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C613 | 1-124-556-11 | ELECT | 2200uF | 20% | 16V |
| C614 | 1-126-052-11 | ELECT | 100uF | 20% | 16V |
| C615 | 1-126-103-11 | ELECT | 470uF | 20% | 16V |
| C616 | 1-126-103-11 | ELECT | 470uF | 20% | 16V |
| C650 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C651 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C652 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C653 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C654 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C655 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C656 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |

< CONNECTOR >

| | | | |
|---|---|---|---|
| CN301 | 1-695-336-31 | PIN, CONNECTOR (PC BOARD) 13P | |
| CN401 | 1-750-640-11 | CONNECTOR, FFC/FPC 23P | |
| CN402 | 1-695-338-11 | PIN, CONNECTOR (PC BOARD) 15P | |
| CN403 | 1-695-366-21 | PIN, CONNECTOR (PC BOARD) 5P | (CA8ES) |
| CN403 | 1-568-852-11 | PIN, CONNECTOR (PC BOARD) 9P | (CA9ES) |
| * CN504 | 1-695-329-31 | PIN, CONNECTOR (PC BOARD) 6P | |
| CN601 | 1-580-230-11 | PIN, CONNECTOR (PC BOARD) 2P | |

| Ref. No. | Part No. | Description | | Remark |
|---|---|---|---|---|

< DIODE >

| | | | | |
|---|---|---|---|---|
| D301 | 8-719-987-63 | DIODE | 1N4148M | |
| D501 | 8-719-210-21 | DIODE | 11EQS04 | |
| D502 | 8-719-210-21 | DIODE | 11EQS04 | |
| D531 | 8-719-987-63 | DIODE | 1N4148M | (CA9ES) |
| D551 | 8-719-109-92 | DIODE | RD6.2ES-B1 | |
| D571 | 8-719-987-63 | DIODE | 1N4148M | |
| D572 | 8-719-987-63 | DIODE | 1N4148M | |
| D573 | 8-719-109-87 | DIODE | RD5.6ES-B | |
| D601 | 8-719-210-21 | DIODE | 11EQS04 | (CA8ES) |
| D601 | 8-719-200-82 | DIODE | 11ES2 | (CA9ES) |
| D602 | 8-719-210-21 | DIODE | 11EQS04 | (CA8ES) |
| D602 | 8-719-200-82 | DIODE | 11ES2 | (CA9ES) |
| D603 | 8-719-210-21 | DIODE | 11EQS04 | (CA8ES) |
| D603 | 8-719-200-82 | DIODE | 11ES2 | (CA9ES) |
| D604 | 8-719-210-21 | DIODE | 11EQS04 | (CA8ES) |
| D604 | 8-719-200-82 | DIODE | 11ES2 | (CA9ES) |
| D605 | 8-719-200-82 | DIODE | 11ES2 | |
| D606 | 8-719-110-13 | DIODE | RD9.1ESB2 | |
| D607 | 8-719-210-21 | DIODE | 11EQS04 | (CA9ES) |
| D608 | 8-719-210-21 | DIODE | 11EQS04 | (CA9ES) |
| D609 | 8-719-210-21 | DIODE | 11EQS04 | (CA9ES) |
| D610 | 8-719-210-21 | DIODE | 11EQS04 | (CA9ES) |
| D611 | 8-719-987-63 | DIODE | 1N4148M | |
| D612 | 8-719-109-85 | DIODE | RD5.1ES-B2 | |
| D613 | 8-719-200-82 | DIODE | 11ES2 | |
| D614 | 8-719-200-82 | DIODE | 11ES2 | |

< IC >

| | | | | |
|---|---|---|---|---|
| IC301 | 8-759-334-75 | IC | CXD8505AQ | |
| IC302 | 8-759-293-17 | IC | CXA8042S | |
| IC303 | 8-759-293-17 | IC | CXA8042S | |
| IC304 | 8-759-900-72 | IC | NE5532P | |
| IC305 | 8-759-900-72 | IC | NE5532P | |
| IC306 | 8-759-900-72 | IC | NE5532P | |
| IC307 | 8-759-900-72 | IC | NE5532P | |
| IC351 | 8-759-167-88 | IC | NJM4565D | |
| IC405 | 8-749-921-12 | IC | GP1F32T | (DIGITAL OUT) |
| IC501 | 8-752-871-27 | IC | CXP84124-038Q | |
| IC531 | 8-759-289-94 | IC | LH5160TF | (CA9ES) |
| IC551 | 8-759-330-30 | IC | BA6193 | |
| IC561 | 8-759-803-42 | IC | LA6500-FA | |
| IC601 | 8-759-330-29 | IC | LA5616 | |
| IC603 | 8-759-633-42 | IC | M5293L | |
| IC604 | 8-759-231-53 | IC | TA7805S | (CA8ES) |
| IC604 | 8-759-604-86 | IC | M5F7807L | (CA9ES) |
| IC605 | 8-759-245-79 | IC | TA79005S | (CA8ES) |
| IC605 | 8-759-604-90 | IC | M5F7907L | (CA9ES) |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < JACK > | | | |
| J301 | 1-569-443-21 | JACK, PIN 4P (LINE OUT) | | | |
| J302 | 1-566-213-11 | PIN, CONNECTOR 4P (CONTROL S) | | | |
| | | < COIL > | | | |
| L304 | 1-410-503-11 | INDUCTOR 3.3uH | | | |
| L305 | 1-410-503-11 | INDUCTOR 3.3uH | | | |
| L403 | 1-410-503-11 | INDUCTOR 3.3uH | | | |
| L501 | 1-424-122-11 | FILTER, NOISE (CA9ES) | | | |
| L511 | 1-412-473-21 | INDUCTOR 0uH | | | |
| L512 | 1-412-473-21 | INDUCTOR 0uH | | | |
| L571 | 1-410-503-11 | INDUCTOR 3.3uH | | | |
| L572 | 1-410-503-11 | INDUCTOR 3.3uH | | | |
| | | < TRANSISTOR > | | | |
| Q101 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | | | |
| Q102 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | | | |
| Q201 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | | | |
| Q202 | 8-729-231-55 | TRANSISTOR 2SC2878-AB | | | |
| Q301 | 8-729-900-65 | TRANSISTOR DTA144ES | | | |
| Q302 | 8-729-900-65 | TRANSISTOR DTA144ES | | | |
| Q303 | 8-729-422-57 | TRANSISTOR UN4111 | | | |
| Q504 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | | | |
| Q571 | 8-729-900-89 | TRANSISTOR DTC144ES | | | |
| Q572 | 8-729-422-57 | TRANSISTOR UN4111 | | | |
| Q573 | 8-729-422-57 | TRANSISTOR UN4111 | | | |
| Q574 | 8-729-422-57 | TRANSISTOR UN4111 | | | |
| Q601 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | | | |
| | | < RESISTOR > | | | |
| R101 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R102 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R103 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R104 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R105 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R106 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R107 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R108 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R109 | 1-215-383-00 | METAL | 27 | 1% | 1/4W |
| R110 | 1-215-383-00 | METAL | 27 | 1% | 1/4W |
| R111 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R112 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R113 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R114 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R115 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W |
| R116 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W |
| R117 | 1-215-422-00 | METAL | 1.1K | 1% | 1/4W |
| R118 | 1-215-429-00 | METAL | 2.2K | 1% | 1/4W |
| R120 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R121 | 1-215-389-00 | METAL | 47 | 1% | 1/4W |
| R122 | 1-215-481-00 | METAL | 330K | 1% | 1/4W |
| R123 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R124 | 1-215-403-00 | METAL | 180 | 1% | 1/4W |
| R125 | 1-215-405-00 | METAL | 220 | 1% | 1/4W |
| R126 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R127 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R128 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R129 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W |
| R151 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R152 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W |
| R153 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |
| R154 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R201 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R202 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R203 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R204 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R205 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R206 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R207 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R208 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R209 | 1-215-383-00 | METAL | 27 | 1% | 1/4W |
| R210 | 1-215-383-00 | METAL | 27 | 1% | 1/4W |
| R211 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R212 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R213 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R214 | 1-215-437-00 | METAL | 4.7K | 1% | 1/4W |
| R215 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W |
| R216 | 1-215-439-00 | METAL | 5.6K | 1% | 1/4W |
| R217 | 1-215-422-00 | METAL | 1.1K | 1% | 1/4W |
| R218 | 1-215-429-00 | METAL | 2.2K | 1% | 1/4W |
| R220 | 1-215-373-31 | METAL | 10 | 1% | 1/4W |
| R221 | 1-215-389-00 | METAL | 47 | 1% | 1/4W |
| R222 | 1-215-481-00 | METAL | 330K | 1% | 1/4W |
| R223 | 1-215-407-00 | METAL | 270 | 1% | 1/4W |
| R224 | 1-215-403-00 | METAL | 180 | 1% | 1/4W |
| R225 | 1-215-405-00 | METAL | 220 | 1% | 1/4W |
| R226 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R227 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R228 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R229 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W |
| R251 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R252 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W |
| R253 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |
| R254 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R301 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |

## MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R302 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R303 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R304 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R306 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R307 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R308 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R309 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W (CA8ES) |
| R309 | 1-249-403-11 | CARBON | 68 | 5% | 1/4W (CA9ES) |
| R310 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R318 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R319 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R320 | 1-247-843-11 | CARBON | 3.3K | 5% | 1/4W |
| R326 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R327 | 1-247-827-11 | CARBON | 680 | 5% | 1/4W |
| R351 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R352 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R501 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R502 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R503 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W |
| R504 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R509 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R510 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R511 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R512 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R513 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R514 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W (CA9ES) |
| R515 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R522 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W |
| R523 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R524 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R525 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R526 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R531 | 1-249-399-11 | CARBON | 33 | 5% | 1/4W (CA9ES) |
| R532 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W (CA9ES) |
| R533 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W (CA9ES) |
| R543 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R544 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W |
| R551 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R552 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R553 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R554 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |
| R555 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R559 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R561 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R562 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R563 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R564 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R565 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R571 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R572 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R573 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R601 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R602 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R603 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W |
| R604 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W |
| R701 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |
| R801 | 1-215-409-00 | METAL | 330 | 1% | 1/4W |

< TRANSFORMER >

| | | |
|---|---|---|
| T703 | 1-424-485-11 | FILTER, LINE |

< VIBRATOR >

| | | |
|---|---|---|
| X301 | 1-579-161-11 | VIBRATOR, CRYSTAL (45MHz) |
| X501 | 1-579-175-11 | VIBRATOR, CERAMIC (10MHz) |

**********

MISCELLANEOUS

**********

| | | |
|---|---|---|
| 157 | 1-769-069-11 | WIRE, FLAT TYPE (16 CORE) |
| ⚠160 | 8-848-367-11 | OPTICAL PICK-UP KSS-213B |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |



96L0579-1
Printed in Japan © 1996. 12
Published by Service and Safety
Engineering Dept. (Shibaura)